THE CHEMIST AND DRUGGIST.

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TRADE BILLS BEFORE PARLIAMENT.

Two measures which claim the serious consideration of every man of business have been introduced this session. The first—a new Bankruptcy Bill—made its appearance in the House of Commons under the auspices of the Attorney-General. This bill, although—even by the admission of its author—inferior to that of last year, will confer great benefits on the commercial community. Its chief objects are to destroy the distinction now existing between insolvency and bankruptcy, or between trader and non-trader; to abolish imprisonment for debt, except in cases of fraud; to do away with classes in certificates; to release the future earnings or acquired property of insolvents from the claims of creditors on former estates, except in cases of fraud; and to give greater power to creditors in administering bankrupt estates.

The other bill relates to Trade Marks; it has been introduced into the House of Lords by no less a person than the Lord Chancellor. There has long been an agitation for legislation on this subject, especially in the north. The Lord Chancellor, when laying the bill on the table, observed that it was intended to protect the manufacturers, not from fair competition, but from fraud. "Their Lordships," he said, "were no doubt aware that the great manufacturers of the country had a mark to identify their workmanship, which was known at home and abroad, and was a guarantee of the genuineness and excellence of the article. The practice had become extremely common to forge those marks, and the result was not only to deprive manufacturers of the profits that were due to their skill and enterprise, but also to bring disgrace upon them, because the articles imposed upon the public by means of such forged marks were generally of an inferior and fraudulent character. In most other countries to forge such marks was a crime punishable by law; but in England the only remedy was either by application to the Court of Chancery for an injunction, or bringing an action at law for damages—remedies which had been found to be very dilatory, very uncertain, and very expensive. By the bill which he now introduced it was proposed to make the forging of those marks, or the selling of goods with a forged mark, with intent to defraud, a misdemeanour—an indictable offence punishable by fine and imprisonment. It would be an inexpensive, and he hoped would also prove an effectual remedy for this most scandalous practice. There was another very common practice of using marks to denote the quality and quantity of goods which were utterly false—marks which professed that a piece of textile fabric, for example, was of a certain length when it was much short of that length, and that it was of certain materials when such was not the fact. That practice it was also proposed to declare a mis-

demeanour, and to subject it to a like punishment; and, lastly, the bill further proposed to deal in a similar manner with the practice of attaching the names of particular artists to paintings and other works of art with a view to deceive."

Fortunately Pharmacists, as a class, are particularly free from bankruptcy, as our "Gazette" witnesses; but the Trade Mark question is of considerable importance to them. In proof of this we may quote the case of a London chemist, who made and sold certain pills, which he called "Sir J. Clarke's Consumption Pills—by her Majesty the Queen's permission," &c. Of course, the object of this was to lead the public to suppose that the pills were prepared by or under the authority of the Queen's physician. Sir James Clarke applied to the Court of Chancery, but could obtain no relief, because *he had not been in the habit of making and selling pills*. His only remedy was an action for libel. Several similar instances will doubtless occur to our readers.

PHOTOGRAPHIC CHEMICALS.—III.

6.—The Various Paper Printing Processes.

There are two distinct methods of printing positives from negatives; first, by development, or, as it is termed, by the negative process, in which a layer of chloride or iodide of silver is exposed to light, and the image developed by gallic acid; and, second, by the direct action of light on a surface of chloride of silver. In the first, the paper is prepared as in the Talbotype or Calotype process already described, using chloride of sodium instead of iodide of potassium; a negative is placed over it, and as soon as a faint image appears it is developed with gallo-nitrate of silver. It is then toned and fixed. The development process is but seldom used, as it does not give such good results as the ordinary process. It is only useful where a large number of prints are wanted in a very short time, or when it is impossible to print in the ordinary way from the badness of the light, a few seconds' exposure in a bright light being sufficient to produce a picture.

In the ordinary printing process, by direct exposure to light until the picture appears, the paper is first floated on a bath of albumen, in which is dissolved a quantity of chloride of sodium or ammonium. The paper is dried spontaneously, or by artificial heat, and presents a highly glossy surface. It is sensitised by being floated for a few minutes on a 60-grain solution of nitrate of silver, and dried. It is exposed under a negative to the direct light of the sun until the image is printed. Care must be taken to over-print the impression, as it is very much reduced in the toning and fixing baths. There are two processes now to be gone through—toning and fixing. The first is to change the colour of the deposit from dirty red to a pleasant shade of brown, purple, or black, according to fancy, and is effected by plunging the washed print into a solution of chloride of gold, to which a small quantity of carbonate of soda has been added, to ensure its alkalinity. After being immersed a few minutes the print, reversing the case of the lobster, turns from red to black, going through various intermediate stages of reddish-brown, chesnut, purple-brown, purple and black, at either of which colours it may be stopped, according to the taste of the operator. It is then washed, and plunged for half an hour in a strong solution of hyposulphite of soda, to which has been added carbonate of soda to keep it alkaline. The hyposulphite of soda removes the chloride of silver, which has not been acted on by light, and the picture is so far fixed. It is now washed for twelve hours at least in water, which is constantly changed at first, in order that not a particle of hyposulphite of soda may remain in the pores of the paper. The print is dried and mounted either with fresh starch or gum. The paper is sometimes chlorised without albumen, the gloss being objected to by many who are content to give up the greater detail and depth that albumen gives. Prints are sometimes toned by the *Sel d'or* process, in which a solution of the double hyposulphite of gold and soda is used, instead of the alkaline chloride of gold mentioned above.

Prints used at first to be toned and fixed in one operation, by using a bath of hyposulphite of soda to which chloride of silver had been added; in fact, an old hyposulphite bath, which had fixed a number of pictures, was used, but this was found to produce prints that faded

after a time. The same observation will apply to the hyposulphite of soda bath to which chloride of gold had been added, which often, although not always, produced unstable prints. Plain paper pictures are often printed by the ammonio-nitrate of silver. To an 80-grain solution of nitrate of silver is added strong ammonia, until the precipitate first formed is re-dissolved, and the paper is floated on it in the ordinary way and dried. The rest of the process is the same. Ammonio-nitrate paper does not keep so long as paper prepared in the ordinary way. The process is inapplicable to albumenised paper.

Of late the practice of vignetting pictures has deservedly gained great favour amongst artistic photographers. This mode of printing is effected by laying over the negative a black or yellow glass, from which the centre has been ground away and softened off at the edges. The resulting print is most artistic in its character, and great effect is given to it by the graduated white margin round it. Great judgment and taste are requisite in printing by this method, both as to the shape of the vignette, and the amount of margin to be left.

The above are the most important of the various printing processes. There are many others, but as yet they are only photographic curiosities. The cyanotype, chrysotype, chromo-type, and the uranotype, in which the salts of iron, gold, chromium, and uranium are used, are amongst the principal of them, but none of these equal in beauty the ordinary silver process.

Bichromate of potash contains chromic acid, a high oxide of chromium. If mixed with gelatine, albumen, or gum, and exposed to the light, the chromic acid becomes deoxidised into sesquioxide of chromium, which unites with these substances and forms an insoluble compound. This property has been taken advantage of in the following processes.

Photo-galvanography is the invention of Herr Pretsch, of Vienna. A glass is coated with gelatine and bichromate of potash, to which have been added certain ingredients to produce what engravers term "a grain." An image is impressed on the plate in the usual way, and when water is applied to the film, the parts not acted on by light swell up, whilst those upon which it *has* acted, being hardened by its influence, remain as before; consequently the image is sunk in as in an engraved plate. A gutta percha cast of it is taken, and copper deposited on it by electrotype to any required thickness. The copper plate so obtained is printed from in the ordinary manner.

Photo-lithography is the invention of M. Poitevin, Colonel Sir Henry James, and others. A lithographic stone is covered with gelatine and bichromate of potash, and a photographic impression taken on it. The stone is then damped with water, which is absorbed by those parts not acted on by the light, and the greasy ink on being passed over it in the usual way adheres to the sunned portions forming the image. This process, modified by Colonel James, has been used with very great success in completing the ordnance survey, the cost of enlarging or reducing plans being reduced to a minimum. Many thousands have been saved to the country by this means.

Photoglyphy is the invention of Mr. Fox Talbot. A steel plate is covered with gelatine and bichromate of potash in the usual manner, and an impression printed on it. Perchloride of iron is then poured over the plate, which etches through those portions unacted on by the light. The results of this process are about as pretty as its name.

A moment's consideration will show that the "negative," to be used in the photoglyphic process, must be a positive by transmission, as the light by protecting the plate has a "whitening" action, so to speak.

Mr. Pouncey, of Dorchester, has lately experimented with considerable success in Carbon-printing. Paper is brushed over with a solution of gum, to which bichromate of potash and fine lampblack have been added. The impression is taken, and the paper on being washed with water, is whitened in the parts not exposed to the light, by the unhardened gum and lampblack being dissolved out.

None of these come up to the ordinary process in any subject containing delicate gradations of light and shade. Nothing can be more perfect than the manner in which they reproduce a plan or engraving; but portraits or views are at present perfect failures. M. Joubert's Phototype is, no doubt, a modification of one or other of these. It is hardly fair to pass any criticism on it as yet, being avowedly imperfect, but the specimens we have seen are much inferior to those of Mr. Pouncey.

The object in experimenting on carbon, as a photographic material, was to procure a de-

posit that was absolutely permanent, it having been found that photographs were amongst the most fading productions of man's hands.

Before terminating our account of the various printing processes, it may be as well to say a few words on this subject. Until within the last few years, it has been the bugbear of photography; notwithstanding all the care possible, photographs have faded in the most extraordinary and inexplicable manner. There seemed to be no rule in their disappearance, for some of those which were taken the most pains with faded, and others preserved every tint as pure as the day they were printed. Professor Hardwich, of King's College, undertook a series of experiments, extending over many months, to discover the remedy for this evil. He found that the causes of fading in photographic prints, were principally, 1. Imperfect washing; 2. Improper mounting material; 3. Impurities in the air; 4. Improper fixing and toning agents. Imperfect washing was rarely the cause of a print fading, except in the earlier days of photography, when the effects of a small quantity of hyposulphite of soda left in the print was unknown. Any mounting material which was liable to turn sour, such as paste, was found to cause the print to fade infallibly. Prints hung against damp walls, or in places where they were liable to be attacked by acid fumes, or the products of the combustion of coal gas, were also found to be very prone to disappear; and, lastly, the cause of fading in the majority of cases was found to proceed from the very process which, with unconscious irony, was termed "fixing." In the old days of photography, a plain solution of hyposulphite of soda was found to be of such an unpleasant foxy red colour, as to be perfectly unpresentable as a specimen of art. Many experiments were made to obviate this, without success, until at last a gentleman discovered that when he had used his hyposulphite bath for a long time, it gave the prints a most artistic brown tint. This was examined into by various photographers, who soon found out that a similar result might be obtained by dissolving blackened chloride of silver in hyposulphite of soda. This process was used for several years, until Mr. Le Gray, the discoverer of the waxed paper process, found he could obtain still finer tones by the use of acid chloride of gold. This process was subsequently modified by mixing the chloride of gold with the hyposulphite of soda bath. The investigations of Professor Hardwich, to whom photographers can never be sufficiently grateful, have proved that all these baths are wrong in principle. They form in use a certain acid sulphur compound which unites with the silver, and forms with it a sulphur compound of fine colour, but most liable to decompose into sulphide of silver, which again, under the influence of damp, changes into yellow sulphate of silver, and ultimately fades the print entirely. The old hypo' bath was the worst of all, as it toned by sulphur entirely. The gold and hypo' bath was well enough when new, but when much used it also toned by sulphur as well as by gold. The only thing to be done was to modify Le Gray's process, so as to do away with all acid of every sort. This is now done in the alkaline toning process, which is used by every conscientious photographer. The prints toned by it have been submitted to every test which can fade them, and they have come out unscathed; and we may safely say that we have now got prints which will last as long as the paper upon which they are printed. Our posterity will have a privilege that we do not possess, that of being able to look at the veritable effigies of our great men. With what interest they will look on the photographs of Macaulay, Humboldt, and Dundonald. With what interest *we* should look on those of Shakespeare, Bacon, and Nelson.

In this very cursory glance at the various photographic processes, we have not attempted to give any practical instructions in the art of photography, it not being our object to make photographers of our subscribers, but dealers in photographic chemicals, who know what they sell and why they sell it. In our next number, we shall begin our articles on photographic chemicals, giving their properties, mode of preparation, and prices; at the end of which, we shall give the best formula for preparing the different solutions used in the various processes.*

* Should any of our readers wish to go further into the matter, they cannot do better than purchase "Hardwich's Manual of Photographic Chemistry," 6th edition, John Churchill, 7*s.* 6*d.*, which gives every information, practical and theoretical, on the subject.

QUANTITATIVE ANALYSIS.

BY DR. HENRY M. NOAD, F.R.S.

IRON; ANALYSIS OF IRON ORES.

This metal is, under all circumstances, weighed as *sesquioxide;* if it exist in a solution in the form of a *proto-salt,* it must be peroxidized by treating either with nitric acid or chlorine water, or chlorate of potash; the precipitant employed is ammonia, by which it is thrown down as hydrated sesquioxide, which is very bulky, but which shrinks greatly on drying, and by ignition is deprived of all its water. Its composition is—

Two equivalents of iron	56	70
Three do. of oxygen	24	30
One equivalent of iron ores.....	80	100

Sometimes iron is precipitated as sulphide by sulphide of ammonium, the washing of which must be effected by water, to which a few drops of the alkaline sulphide have been added, the funnel being covered with a glass-plate to prevent the sulphide from oxidizing into sulphate; the washed sulphide of iron is, together with the filter, digested with dilute hydrochloric acid, filtered, and the filtrate having been peroxidized with nitric acid or chlorate of potash, is precipitated by ammonia. When iron has to be separated from other bases, it is sometimes thrown down by either *benzoate* or *succinate* of ammonia, the solution having been previously exactly neutralized by ammonia; the resulting succinate or benzoate is filtered when quite cold, and washed, first with cold and finally with warm water, it is then dried, and ignited, with free access of air, by which it is decomposed, and the iron brought to the state of anhydrous sesquioxide, in which state it is weighed.

Analysis of Iron Ores.—We take for illustration a specimen of the most complicated description; the substances besides iron to be looked for, and estimated, being *water* (hygroscopic and combined), *organic matter, sulphur* (as sulphuric acid, and as bisulphide of iron), *phosphoric acid, carbonic acid, silicic acid, oxide of manganese, alumina, lime,* and the *alkalies. Lead, tin, copper,* and *arsenic,* are also occasionally met with; these metals are sought for by a special operation on a large quantity of ore. Too great care cannot be bestowed on the *sampling* of ores intended for analysis; as to expend so much time and labour on an isolated specimen (unless for a special object) would be worse than useless.

1. *Determination of Water.*—Fifty or a hundred grains of the ore, finely pulverized, are dried, first in the water-oven until no further loss of weight is experienced, and then heated to redness in a tube of hard glass, to which is adapted a weighed tube containing chloride of calcium; the powder is then gradually raised to a low red heat; the *combined* water is thereby expelled, and its amount determined by the increase in weight of the chloride of calcium tube.

2. *Sulphuric Acid, and Sulphur.*—From fifty to one hundred grains of the ore are digested with hydrochloric acid, filtered and washed. The filtrate, concentrated by evaporation, is precipitated by excess of chloride of barium. Every hundred parts of the sulphate of baryta produced indicate 34·37 parts of sulphuric acid. The insoluble residue on the filter is fused with three times its weight of pure carbonate of soda, and its own weight of pure nitre; the fused mass is dissolved in hydrochloric acid, evaporated to dryness, moistened with strong acid, diluted and filtered; from the filtrate the sulphuric acid is precipitated as sulphate of baryta, every hundred parts of which indicate 13·75 parts of sulphur = 25·48 parts of bisulphide of iron.

3. *Phosphoric Acid.*—From fifty to one hundred grains of the ore are digested with hydrochloric acid, and filtered; the clear liquid, which should not be too acid, is boiled with *sulphite of ammonia,* added gradually in small quantities till it either becomes colourless or acquires a pale green colour, indicating that the whole of the iron is now in the state of protoxide; the solution is nearly neutralized with carbonate of ammonia, excess of acetate of ammonia added, and the liquid boiled; a few drops of strong solution of perchloride of iron are now added, until the precipitate which forms has a distinct *red* colour; this precipitate, which contains all the phosphoric acid originally present in the ore, is collected on a filter,

washed, and re-dissolved in hydrochloric acid, *tartaric* acid added, and then ammonia in excess. From this ammoniacal solution the phosphoric acid is finally precipitated as ammonio-magnesian phosphate, by the addition of chloride of ammonium (in abundance), sulphate of magnesia, and ammonia. The precipitate is allowed twenty-four hours to subside, it is then collected on a filter, and if it has a yellow colour, which is almost invariably the case, it is re-dissolved in hydrochloric acid, and more tartaric acid being added, it is again precipitated by ammonia, one hundred parts of the ignited residue correspond to 64·3 parts of phosphoric acid.

4. *Determination of the Iron.*—This is performed on a separate portion of the ore, either by the volumetric method of Marguerite, or by that of Penny. Both give very accurate results; but we prefer the former. It is based on the reciprocal action of the salts of protoxide of iron and permanganate of potash, whereby a quantity of the latter is decomposed exactly proportionate to the quantity of oxide of iron. To prepare the permanganate of potash, seven parts of chlorate of potassa, ten parts of hydrate of potassa, and eight parts of peroxide of manganese are intimately mixed and heated to dull redness for an hour. The fused mass is digested in water so as to obtain as concentrated a solution as possible, and dilute nitric acid added till the colour bccomes violet: it is afterwards filtered through asbestos. The solution must be defended from the contact of organic matter, and kept in a bottle closed with a glass stopper. If the solution be evaporated, it yields beautiful bronze-colour acicular crystals. It is better to employ the crystals in the preparation of the test liquor, as the solution keeps much better when no *manganate* is present. To prepare the normal or test liquor, a certain quantity, say fifteen grains, of pianoforte wire are dissolved in pure hydrochloric acid; after the disengagement of hydrogen has ceased, and the solution is complete, the liquor is diluted with about a pint of water, and accurately divided by measurement into two equal parts: the number of burette divisions of the solution of permanganate required to produce in each the pink colour is accurately noted, and this number is then employed to reduce into weight the result of the analysis of an ore. A useful normal liquor is made by dissolving 100 grains of the crystals in 10,000 grains of water. The ore to be analysed (about ten or fifteen grains) is dissolved in hydrochloric acid, and the metal brought to a minimum of oxidation by the hydrogen evolved by introducing into the liquor pure zinc —a point known to be reached when the solution bccomes colourless; the excess of zinc is then removed, and the standard permanganate added cautiously drop by drop until the pink colour appears, when the number is noted. If the ore contains both *protoxide* and *sesquioxide of iron*, the relative proportion of each may be accurately determined by means of the permanganate test solution: the total amount of iron is first ascertained as above, and then another estimation made without previously reducing by zinc; the iron represented by the latter existed in the ore as protoxide, the remainder as sesquioxide.

5. *Manganese, Alumina, Lime, and Magnesia, and Insoluble Residue.*—About twenty-five grains of the ore are digested for a quarter of an hour with hydrochloric acid, then water added, boiled for another quarter of an hour, and filtered: the washed residue on the filter is for practical purposes only examined for sulphur (2), having been previously well dried and weighed. The filtrate and washings are concentrated, the iron peroxidized by chlorate of potash, the solution nearly neutralised with ammonia, boiled with about one fluid ounce of concentrated solution of *acetate of ammonia*, and rapidly filtered while hot: the precipitate on the filter consists of the *basic acetates of iron and alumina*; the filtrate (which should be colourless) contains the *manganese* and the *alkaline earths*. To determine the manganese, the clear liquid is introduced into a flask, ammonia added, and then a few drops of *bromine*, and the flask closed; in a few minutes, if manganese be present, the liquid acquires a dark colour; it is allowed to remain at rest for twenty-four hours, then warmed, rapidly filtered, and washed: it is hydrated oxide of manganese, which, by ignition, becomes $Mn_3 O_4$, 100 parts of which correspond to 93 parts of protoxide. The filtrate from the oxide of manganese contains the *lime* and *magnesia*, which are estimated in the manner described in a previous paper. The alumina (if present) is separated from the oxide of iron in the basic acetates, by redissolving in hydrochloric acid, and boiling once or twice with excess of pure caustic potash in the manner described in our last communication treating of the analysis of clays and limestones.

6. *Carbonic Acid.*—Fifty grains of the ore are fused with about 200 grains of dry borax,

and the loss of weight on cooling noted. This method is very accurate, though it is apt to injure the platinum crucible. The amount of carbonic acid may also be estimated by noting the loss sustained after adding to a weighed portion of the ore sulphuric acid. Carbonic acid constitutes a considerable part of the weight of *clay iron-stones*.

7. *Alkalies.*—The search for potash and soda is never necessary in a technical analysis of an iron ore; but when required, the method of Dr. Smith, described p. 7, may be followed.

8. *Metals precipitable by Sulphuretted Hydrogen.—Copper, tin,* and *lead* are occasionally met with in iron ores; and as their presence affects materially the commercial value of the ore, a search for them is necessary. A weighed portion of the ore, varying from 200 to 2000 grains, is digested for a considerable time in hydrochloric acid; the solution is filtered off; the iron in the filtrate reduced by sulphite of ammonia, and a stream of sulphuretted hydrogen sent through; a small quantity of sulphur, which is always suspended, is collected on a filter and thoroughly washed; it is then incinerated at as low a temperature as possible. The residue (if any) is mixed with carbonate of soda and heated upon charcoal before the blow-pipe: any globules of metal that may be obtained are dissolved in dilute hydrochloric or nitric acid, and tested.

[In our next paper we shall describe a general method for the examination of *waters*.]

THE NATURAL ORDERS OF PLANTS.

CRUCIFERÆ OR BRASSICACEÆ.—THE CRUCIFEROUS, OR CABBAGE ORDER.

"THIS order," says Lindley, "is one of the most natural known, and is eminently European." It consists principally of herbaceous plants, which are annual, biennial, or perennial, and very rarely shrubby. One hundred and sixty-six species are stated to be found in Northern and Middle Europe, one hundred and seventy-eight on the northern shore or islands of the Mediterranean; forty-five are peculiar to the coast of Africa, between Mogador and Alexandria; one hundred and eighty-four to Syria, Asia Minor, Tauria, and Persia; ninety-nine to Siberia; thirty-five to China, Japan, or India; sixteen to New Holland and the South Sea Islands; seventy to the Cape of Good Hope; nine to the Canaries, or Madeira; two to St. Helena; two to the West Indies; forty-one to South America; forty-eight to North America; five to the Islands between North America and Kamtchatka; and thirty-five are common to various parts of the world. These numbers serve to give an idea of the general distribution of the order, but are liable to considerable modification at the present time. There are one hundred and ninety-five genera, and one thousand six hundred species. Withering gives the derivation of the generic name Brassica, as probably from *βρασσω*, to boil; being commonly so prepared as an esculent vegetable. The order belongs to the class Exogens; sub-class Thalamiflorae.

BOTANICAL CHARACTERS.—The leaves are alternate and without stipules (little leafy appendages at their base). The flowers are usually arranged in racemes, are generally without bracts, and mostly yellow or white, seldom purple, sometimes a mixture of these colours. The sepals (divisions of the calyx) are four, and deciduous, imbricate, or valvate. The petals (divisions of the corolla) are four, hypogynous, cruciate, alternate with the sepals, and deciduous. The stamens (male organs) are tetradynamous (six in number, four of which are long and two short). The thalamus (the receptacle or summit of the axis upon which the different whorls of the flower are arranged) furnished with green glands placed between the stamens and the ovary. The ovary (that part of the female organ which contains the rudimentary seeds) is superior, one-celled, or usually two-celled, in consequence of two parietal placentas meeting in the middle and forming a spurious dissepiment or partition. Stigmas two, and situated opposite the placentas. The fruit, which is termed a siliqua or silicula, is one-celled, or spuriously two-celled, and one or many seeded. The seeds are stalked, and have no albumen.

DIAGNOSIS.—Professor Bentley thus describes them:—"Herbs. Bracts generally absent. Sepals and petals four, deciduous, regular; the latter cruciate. Stigmas two, opposite to the placentas. Stamens tetradynamous. Fruit, a siliqua or silicula. Seed without albumen, and with the radicle variously folded upon the cotyledons."

The order was divided by Linnæus into six sub-orders, according to the peculiar nature of the fruit, and these were further divided into tribes. The mode of division now followed is that of De Candolle, based upon the mode in which the embryo is folded. They are,—1. *Pleurorhizeæ* (from πλευρὰ, the side; and ῥίζα, a root.) 2. *Notorhizeæ* (from νῶτον, the back; and ῥίζα.) 3. *Orthoploceæ* (from ὀρθὸς, straight; and πλόκος, a plait or fold.) 4. *Spirolobeæ* (from σπεῖρα, a coil; and λοβὸς, a lobe.) 5. *Diplecolobeæ* (from δὶς, twice, πλέκω, I fold or plait; and λοβὸς, a lobe.) We refer such of our readers as may wish to become further acquainted with this part of the subject, to the excellent manual by Professor Bentley.

DISTINCTION FROM ALLIED ORDERS.—The plants of this order are not likely to be confounded with those of any other than *Capparidaceæ*, if ordinary care be observed. They may at once be distinguished from the flowers of the latter order by their stamens, which, though always tetradynamous, are never raised above the corolla upon a lengthened thalamus or stalk.

GENERAL PROPERTIES.—The universal character of the order is the possession of anti-scorbutic and stimulant properties, combined with an acrid flavour. Their pungency depends on a volatile oil composed of carbon, hydrogen, nitrogen, oxygen, and sulphur. An oil expressed from the seeds is one of the most important products. None of the plants of the order, with one or two doubtful exceptions, are poisonous; they furnish us with many esculent vegetables. The disagreeable odour emitted by the plants of this order when decaying is attributed to the sulphur and nitrogen which they contain.

PRINCIPAL PLANTS AND USES.

ANASTATICA.—The species *hierochuntina*, or Rose of Jericho, is an annual, found in the Egyptian deserts, and is remarkable for its hygrometric properties. When full grown it contracts its rigid branches into a ball, which in dry weather is drifted about by the winds in the deserts of Syria and Egypt. When it is exposed to the influence of water, its branches relax and spread flat, as if its life had been renewed. Some superstitious tales are told of it; among which, it is said to have first blossomed on Christmas eve, to salute the birth of the Redeemer, and paid homage to His resurrection by remaining expanded till Easter.

ARABIS.—The species *Chinensis* is said to be prescribed by the Indian doctors as a stomachic and gentle stimulant; but they apprehend its bringing on abortion if imprudently given.

BRASSICA.—The species *Campestris* is regarded by some as the source of the Swedish turnip; but others consider it to be a hybrid between the species *Campestris* and *Rapa*, or *Napus*. The seeds of the species *Chinensis* yield Shangai oil. The species *Oleracea* is supposed to be the common origin of all the different kinds of cabbage, cauliflower, brocoli, savoys, &c., the different varieties being produced by the art of the gardener. Brocoli and cauliflowers are deformed inflorescences. From the seeds of the species *Napus* a large quantity of a bland fixed oil is obtained, useful for burning and other purposes, whilst the cake, left after expression of the oil, is a valuable food for cattle under the name of oil cake. The oil is termed rape, cole, or colza. The species *Rapa* is the common turnip.

CAMELINA.—The species *Sativa*, or Gold of Pleasure, yields a fixed oil by expression of its seeds, but the remaining cake is stated to be too acrid as a food for cattle.

CARDAMINE.—An article on the species *Pratensis* will be found in our Botanical Calendar for May.*

CHEIRANTHUS.—The species *Lividus*, is said to be dangerous to goats.

COCHLEARIA.—An article will be found on the species *Officinalis* in our Botanical Calendar for April,† and on the species *Armoracia* (now termed *Armoracia rusticana*)in that for May.‡

CRAMBE.—The species *Maritima*, yields the delicious vegetable known as Sea Kale. The stem and leaf stalks, which in a wild state possess much acridity, are deprived of that property by cultivation. The species *Tartarica* yields the "Tartar bread," which is sometimes eaten in Hungary. The root is peeled, sliced, and eaten with oil, vinegar, and salt, or even when boiled.

ISATIS.—The species *Tinctoria*, or Woad, was formerly a favourite blue dye in this country. The species *Indigotica*, is the Tein Ching, or Chinese Indigo.

* Vol. i. p. 186. † Vol. i. p. 157. ‡ Vol. i. p. 186.

LEPIDIUM.—The species *Sativum*, is the common Garden Cress, commonly used as a salad together with the young herbs of the mustard plant. The species *Piscianium*, is said to stupefy fish.

NASTURTIUM.—The species *Officinale*, is the well-known common Water Cress, which, according to Muller, contains Iodine.

RAPHANUS.—The species *Sativus*, is the common Radish.

SINAPIS.—The seeds of the species *Nigra* and *Alba*, are commonly employed for medicinal and dietetic purposes. The condiment known as mustard consists of the ground seeds of both species. The common flour of mustard of the shops is adulterated with wheaten flour, coloured by turmeric, and rendered hot by pod pepper. A fixed oil is obtained from the seeds of both species by expression; the cake left after expression is employed for the purposes of manure, being too hot for food for cattle. By distillation with water the black mustard yields an essential oil, which does not pre-exist in the seed, but is produced by the mutual action in the presence of water of two principles existing in the seed, myrosine and myronate of potash. Its powerfully acrid, rubefacient, and vesicant properties are well-known. No essential oil can be produced from the white variety, its properties are due to a fixed pungent and acrid principle which does not pre-exist in the seeds, but is supposed to be produced by the mutual action of two principles contained in the seeds, termed Sinapin, or Sinapisin, and a substance resembling vegetable albumen or emulsin, when brought into contact with water. The seeds of the species *Chinensis* are considered by Hindoo and Mahomedan practitioners as stimulant, stomachic, and laxative.

The Wall Flower (*Cheiranthus cheiri*); Candy Tuft (*Iberis umbellata*); Honesty (*Lunaria biennis*); Stock (*Matthiola*), &c., are favourites in our gardens.

SARSAPARILLA OF THE MUNDRUCUS.

THE medical virtues of Sarsaparilla has given rise from time to time to great controversy, and has produced many and various opinions. Why it has fallen in the estimation of scientific men of this country and the Continent, or why it never obtained so great a reputation as it has in America, may arise from two causes. First, that the root imported into this country and offered for sale is generally the product of the less valuable species,—and the species are without number; and, second, that the fresh juice or sap, and not the rhisome or bark—dried as it appears in commerce—probably is the active and medicinal principle.

It is our purpose to state here the nature of the Sarsaparilla of this Indian tribe; and, in doing so, some light may be thrown upon Sarsaparilla generally, and thus account for the contrary opinions maintained.

This plant is one of the chief articles of commerce dealt in by the Mundrucus. It is gathered by the women and children six months out of the year; the remaining six months being spent in hostilities against tribes of adjoining territories.* The time adopted by the Mundrucus for gathering the Sarsaparilla is during the wet season, as then they do not go to war, but choose the fine hot weather for this purpose, and as the roots are more easily dug or pulled from the damp earth, especially where the tendrils grow near the surface, and they will pull up without breaking. If the mother root be not dug out with the tendrils—which seldom or ever happens, as the improvident collectors think not of to-morrow, the day's sufficiency being to them all they require—it will rapidly yield a new crop of shoots; thus it might become exceedingly abundant. After gathering as much root as they can carry home with them, they return with their product to the malocca, or receiving-house. In this its fresh state, it is very heavy, arising from the quantity of sap it contains, and from the mud that adheres to it.

At this the primary mart Sarsaparilla obtains its price. A bundle is bartered for about four dollars' worth of various commodities, such as iron tools and articles of warfare; but they more often exchange the product of their labour for ornamental gewgaws, as beads, ribbons, coloured prints, &c.—articles greatly admired and coveted by most savage races.

* The territory of the Mundrucus or Beheaders is situate far up between the Tapajos and Madeira. On the Tapajos above the Caxoeiras, or Cataracts, their villages are found. Here they live without any interference on the part of the whites; but are very much harassed and perplexed by neighbouring tribes, especially the Muras, who live at the mouths of the Madeira and Rio Negro.

The cost at first hand may be estimated at sixpence a pound; for the Mondrucu is very careful about washing a material that has cost his wife and children so much difficulty in gathering, and as he well knows that his Sarsaparilla is of the best kind and much sought after in the medical market.

The radix sarsæ that enters into commerce is the product of a great variety of species of plant, most of them of the genus Simlax; but great quantities of the genera of Carex and Herreria are imported and sold for this root, the resemblance to each other being very close. The Simlax grows abundantly throughout the whole torrid zone in America, Asia, and Africa, and it is also collected outside the tropics many degrees—as is the case in Virginia and on the whole banks of the Mississippi, and also on the warm humid peat lands of Australia. The best Sarsaparilla, however, is that which grows in tropical countries, in warm and moist situations, and where the land is light and mossy. These conditions are necessary to enrich the virtue of the sap, and render it a valuable medicinal agent.

As stated above, the number of kinds that furnish us with what is called Sarsaparilla are of great variety, are brought from all parts of the world, and are equally varied in respect to excellence of quality. Many species seem worse than valueless, inasmuch as they injure the reputation of a good article; and, for this reason, manufacturers of the various preparations of Sarsaparilla should use careful selection in the quality they purchase. As a matter of course, like all other articles, either of food, clothing, or medicine, the valuable kinds are the most valuable, because they are the scarcest; as, in this instance, the best Sarsaparilla can only be obtained in situations both difficult of access—from the unhealthy climate,* and dangers of exploration—from the savagery of the natives on whose territory it grows. Of its vast abundance there is no doubt, for on the banks of many of the South American rivers it exists in forests, especially on the Rio Negro—the "black river," the Indians believing that its colour is produced by the dense wilderness and black roots of the Sarsaparilla. This, however, is fallacious, as there are many of the white water rivers that run through regions abundantly supplied with Sarsaparilla root; therefore the black water of the Rio Negro and other rivers arises from other causes, at present not understood.

The Mondrucu sarsæ is the *Simlax papyracea* of Soiret, and is known in commerce as red Sarsaparilla. It is a climbing plant or under shrub, the stem of which is flattened and angular, with rows of prickles growing along the exposed edges. It shoots straight up without any support as high as twenty feet, or until it clings to the branches of the surrounding trees, when it shoots out in all directions, and spreads for a considerable distance. The main root shoots out many long tendrils of one thickness, covered with a brownish or dark grey bark. The shoots are fibrous, and are about as thick as a quill, always crooked—a natural tendency—and longitudinally wrinkled, with here and there some smaller lateral fibres branching off from the sides. The leaves are of an oval acuminated shape, and marked with nerves longitudinally.

The medicinal properties of Sarsaparilla exist in the bark or epidermis of the rhizomes, but the tendrils, both bark and rhizome are collected together, without any choice or discrimination, and it remains thus adulterated until it reaches the druggist, who has to prepare from it his medicamentous extract, and who is frequently disappointed through a want of vigilant examination, which should be bestowed upon it by the wholesale buyer.

What we have already said of Sarsaparilla admits of but little doubt that its virtue—as a depurative and restorative in disorders of the blood, and in all its other therapeutic uses, viz.: in secretions, cachectic, scrofulous, and consumptive habits, debility, &c.—is to be found in its fresh juicy state. Of this it is certain, that it is not so generally esteemed in countries where it does not grow as it is where it is common and can be procured fresh. In the whole of Spanish America its properties are unquestioned, and experiment and experience has there led to an unlimited use of it. It is indeed most natural to suppose that in the careless process of exsiccation—which is done during its transit from wherever it is collected—that its virtues suffer very materially, and the question is whether they are not entirely destroyed.

* The climate of the Mondrucu, although one of the most unhealthy in all the Amazon region, on account of its great heat and humidity, is for that very reason one of the most fertile. Nearly all those tropical vegetable products which characterize the exports of the Brazilians, can be produced in greatest luxuriousness on the Mondrucu soil; but it is only those that thrive naturally, and which are the easiest to collect, which merits his absent and careless attention.

The portions of the root trusted for its sanitary principles by the British colleges of medicine is the epidermis. It is mucilaginous, and bitter to the taste, and possesses highly tonic properties. By our Atlantic cousins it is known generally as a "purifier of the blood."*

The preparations of Sarsaparilla of the London Pharmacopœia are extract, syrup, and decoction, which should be administered with due regularity, and discontinued by degrees. Taken warm, Sarsaparilla is decidedly sudorific, but for this purpose it is unfrequently employed.

The appearance of the radix sarsæ of commerce is familiar to all. It is in round bundles of uniform size, and is exhibited in numbers of druggists' shop windows. After the root is collected, and when it is somewhat dried for the convenience of stowage and carriage, an item hated by the trader, it is necessary to have uniformity of parcels. The parcels or packages of Sarsaparilla are formed by laying the roots side by side, and doubling in the ends of the longer ones. A bundle of the proper size for stowage contains an arroba of twenty-five pounds, but often the weight varies from the wet or dry state of the root. Each bundle is tied round with a "sipo," or creeping plant.†

FANCY AND FASHION IN PHARMACY.

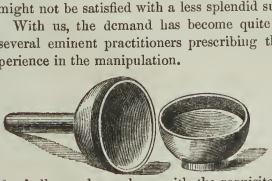
By Edward Parrish and William C. Bakes.‡

The legitimate enterprise of our progressive age, heightened by the competition resulting from the overcrowding of educated pharmaceutists in large cities, continually exhibits itself in some new phase of practice, sometimes destined to be permanently incorporated into the arcana of the profession, but often too ephemeral to deserve more than a passing notice. As the dress and address of our remote ancestry will occasionally loom up amid the ever-changing fashions of modern society, so do we occasionally find the almost forgotten institutions of bygone pharmacy frequently dressed in the popular guise of new remedies.

In the present essay, we propose to describe some rare preparations now called for in Philadelphia. Though they may seem to readers in other localities of too trivial importance to occupy a position in the Journal, we are sure they will not be without their use in this particular pharmaceutical centre.

Coating Pills.—In the last century, the practice was not unfrequently resorted to, of coating freshly made pills with silver or gold-leaf, and in some of the long established pharmaceutical stores in London, facilities are always at hand for finishing pills in this way when in request. Some very particular people of the old school occasionally bring an ancient recipe, at the foot of which is written *deaurentur pilulæ*, meaning, let the pills be gilt, and might not be satisfied with a less splendid surface than that of the gilded pill.

With us, the demand has become quite frequent of late for silver and gold-coated pills, several eminent practitioners prescribing this elegant finish, and we have acquired some experience in the manipulation.



The engraving represents an apparatus we have had turned to order from hard wood for use in this process. In rolling the pills, care is taken to use no dusting powder of any kind, and to have them moderately damp, otherwise we moisten them with a little syrup, and then introduce them into the hollow sphere along with the requisite quantity of silver or gold leaf; a rapid motion is now given to the globe, and in a few seconds the pills are removed with a clear and bright coating. One dozen pills of average size require one sheet of foil, and larger numbers in the same proportion. Some difficulty is experienced in giving a handsome coating to pills of Quevenne's Metallic Iron, on account of their black colour; this can only be obviated by the

* The bark of the Laurus Sassafras is also used by the Americans for this purpose, but Sarsaparilla is more frequently preferred.

† It is stated that this sipo is a root of the Sarsaparilla, with the bark scraped off, in which statement we quite concur, as the root of Sarsaparilla is very flexible and tough when this operation is performed.

‡ From the *American Journal of Pharmacy*.

use of a larger proportion of foil, which may be objectionable as interfering with their solubility, notwithstanding its extreme tenuity.

The taste of the pills is of course disguised in proportion to the completeness of the coating; in dispensing, no powder is necessary, the tendency to adhere to each other being obviated.

Some of the old recipes direct to use a gallipot laid against the palm of the hand, for coating pills with the foil. We have found two porcelain capsules fitted to each other, the opening at the lips being covered by the thumb, to serve a very good purpose; but there is a decided saving in the use of an apparatus as above figured, any portion of the foil not adhering to one charge of pills will be ready for the next, besides the advantage which is gained by the leverage of the handle.

In what is here said, we have ventured no opinion upon the effect of this treatment upon the solubility and consequent activity of pills. We learn from a physician who has prescribed them, that the conclusion often hastily drawn against their eligibility is not borne out by experience. Another remark needs to be made; not only is the quality of the foil important with reference to the lustre of the coating, but Dutch metal, which is so often substituted for gold foil, is quite unsuitable, from containing copper and zinc.

For sugar-coating, our apparatus offers facilities over some other contrivances; the sugar being triturated with gum arabic into a dust-fine powder, and introduced into the spheres, can be readily transferred to the moistened pills, but we believe there is no good way of giving the desirable surface to these "*draggees*" without the application of carefully regulated heat.

DISPENSING.—The mode of dispensing pills has sometimes an importance which is overlooked by pharmaceutists. In England, the practice obtains among those who cater to the taste of the wealthy, of sending out pills in vials, which are regularly made and sold by the dealers in Druggists' Sundries, of the proper sizes for one, two, or three dozen pills; these have cork stoppers capped with turned tops of satin or box-wood, and are certainly well adapted to the purpose, especially where pills are deliquescent, or have a special tendency to become dry and hard. The construction of pill boxes has especially engaged our attention of late, from observing the rather unsightly, though otherwise superior description imported from Germany. Improving upon them in style, we have adopted the same mode of construction, and have produced a very superior pill box, such as is shown in the drawing. Instead of the top and bottom piece being, as in the common kind, cut out of such size as to fit into the cylinder, constituting the sides of the box, they are so large as to extend over its edge, on which they are secured by a margin of fancy paper covering the projecting ridge. Every pharmaceutist of experience must have noticed how often pill boxes are returned with the bottom or top, or both, loosened and sometimes lost, to the great annoyance of the purchaser, and requiring a new box with every renewal of the prescription; this is obviated by the use of the box now described. A flat shape is not without advantage, being convenient for the waistcoat pocket, and allowing ample space on the top for labelling, which the somewhat lengthy directions occasionally required.

JELLIES.—Jellies made of fixed oils, have the advantage of diminishing the adhesion of these to the mouth, which is the most disagreeable property of this class of remedies. Cod-liver and castor oil jellies, as patented by Queru, of New York, enjoy a large sale, and are much prescribed by physicians; without interfering with this patent, the physician may prescribe jellies of any of the fixed oils or of copaiva, by a recipe somewhat like the following:

Take of the fixed oil, an ounce; honey; syrup, of each half a fluid ounce; powdered gum arabic, two drachms; Russian isinglass, forty grains; orange flower water, six fluid drachms.

Dissolve the isinglass by the aid of heat, in half an ounce of the orange flower water, replacing the water as it evaporates. Triturate the other ingredients with the remainder of the orange flower water, into a homogeneous mass in a warmed mortar, then form an emulsion by adding the solution of isinglass, stirring as it cools and set aside to gelatinize.

This is an opaque emulsion, but possesses all the advantages of this form of preparation. The flavouring ingredient may be changed to suit the taste, bearing in mind the ascertained fact that the bitter almond flavour most completely disguises that of cod liver, and perhaps of most other oils.

WAFER ENVELOPES.—The wafer is a preparation rarely used in this country, but much

employed abroad for enveloping doses of medicine, especially in the form of powder. We have met with no recipe for its preparation in any of the works on pharmacy, and have heretofore obtained only those imported from France.

In the absence of any directions in the books, we have adopted the following process with complete success :—

Two sad-irons are warmed to a temperature at which they may be touched without burning the fingers, not so hot as to occasion a globule of water to run off when thrown on the level surface. One of the irons is maintained at a slightly increased temperature by inverting it over the gas furnace ; a very little oil of almonds or butter, on a fragment of cotton cloth, is now rubbed over the surface of each iron. A portion of the finest wheaten flour, mixed with water into a smooth batter or thin paste, is now poured on the inverted iron, and the other iron is immediately pressed firmly upon it. After a minute or two the wafer is removed and trimmed into shape. The French wafers are cut into circular discs of about 3½ inches diameter, which appears to be done by the use of annular steel punches. We think the square wafer possesses some advantage for enveloping powders and pills, by folding the corners into the centre. In using the wafer, it is to be moistened by dipping into a tumbler of water, laid on the palm of the hand, the powder or pill dropped in the centre, the edges folded over it, when it may be swallowed like an oyster, without tasting its contents.

SUPPOSITORIES.—"Machine-made Suppositories," of elegant quality and finish, made of cocoa butter, with a variety of medicinal ingredients, have lately been introduced in this city,* and have led to enquiries among our pharmaceutists as to the best arrangements for producing them.

To what has been already published by A. B. Taylor, in the *American Journal of Pharmacy,* and in Parrish's work, we may add a few practical suggestions, the result of recent experience in this manipulation. The consistence of cocoa butter *alone* is not well adapted to the preparation of an elegant and firm suppository. It is a good basis when combined with a harder and rather less fusible material. We have found wax, in the proportion of one part to five of the cocoa butter, to answer a very good purpose.

The use of metallic moulds for making suppositories, though no doubt convenient and readily obtained at moderate expense from syringe makers, is quite unnecessary, as the paper cone is convenient, always accessible, and may be adapted to any size required. Perhaps the most suitable weight for a suppository is 25 grains, and there seems no advantage in departing from this standard for ordinary purposes. They are readily introduced when much larger, as indicated in the prescriptions of Drs. Pancoast and S. W. Mitchell, published in the paper already referred to ; but on the other hand, they are perhaps equally efficacious when still smaller, the butter of cocoa being merely used as a vehicle, to be increased or diminished at pleasure. The object in having this preparation of an uniform size is to facilitate the construction of the paper moulds, which, when a suppository of 25 grains is prescribed, may be made as follows .

A piece of very stout glazed paper is cut up into oblong pieces, 2¼ inches long by 1½ wide, and rolled into a cone, which should be 1⅜ inches long and half an inch at the base ; the free end of the paper is secured by a tip of sealing wax, and at the extreme point of the cone an eighth of an inch is clipped off, and the opening sealed up. The object is next to arrange these cones with the open end in a proper position to be filled with ingredients ; this is conveniently done in a shallow vessel of flaxseed—sand is objectionable from its liability, if accidentally thrown into the cone, to produce irritation when the suppository is applied. The butter of cocoa and wax should be melted by a gentle heat, and then the active ingredients added and constantly stirred until it begins to chill, then poured into the paper cones and set aside to harden. The paper should not be removed from the suppository until it has become thoroughly hardened, and by this means it will acquire a clear, polished surface. The time required to prepare a dozen or more suppositories is from half an hour to an hour ; the physician should be reminded in advance that they cannot be furnished without some little delay.

* Philadelphia.

ON COAL GAS.

THE Rev. W. R. Bowditch has communicated to the Royal Society a valuable paper on Coal Gas: the following is a *resumé* of the principal results of his experiments. The whole of the ammonia (under which form most of the nitrogen of the coal is expelled), is removed from gas by *clay* so completely that no trace of that alkali can be detected after the gas has left the purifier, charged with an adequate quantity of clay and lime. Acids also remove ammonia from gas, but at the same time they deteriorate the gas by withdrawing some of its light-giving elements; clay, on the other hand, improves the gas, by removing certain substances which lessen its illuminating power. When gas is passed through saw-dust moistened with dilute sulphuric acid, the saw-dust instantly changes to a beautiful pink colour, which gradually deepens until it becomes a dark mahogany. According to Mr. Bowditch this colour is produced by illuminating matter abstracted from the gas, and he suggests that the value of gas as an illuminant may be approximatively determined by ascertaining the depth of colour produced by passing known volumes of it through U shaped tubes, filled with the same kind of saw dust, moistened by a standard acid. *Cyanogen* and *sulpho-cyanogen* were both obtained from an alcoholic solution of clay from the purifier: on one occasion Mr. Bowditch obtained nearly an ounce of tolerably pure *sulpho-cyanide of ammonium* from less than a quart bottle of foul clay. All the sulphur existing in the products of the pyro-decomposition of coal in the forms of sulphide of hydrogen and sulphide of ammonium, is very perfectly removed from gas by the ordinary methods of purification; sulphur, however, exists in other forms, probably as volatile organic compounds of that element, which have hitherto resisted all processes devised for their abstraction. Mr. Bowditch states that his attention was drawn to this subject by a conversation with the manager of a London gas works, who informed him that he not unfrequently filled his gasholders with gas which would not affect acetate of lead, but that after the gas had been stored a few hours it became so foul as to blacken lead paper the instant it was applied; gas, likewise, which went to the gasholders free from ammonia, sometimes becomes ammoniacal if kept, and joining these two facts together, Mr. Bowditch inferred that an organic compound containing nitrogen as well as sulphur and hydrogen, became broken up in the stored gas. He procured some crystals of *naphthalin*, which had been deposited in gas pipes from the mains of a London gas works, and which therefore must have been deposited by *purified* gas; he found it neutral to test paper, and that it evolved no ammonia when boiled with an alcoholic solution of potash, and no sulphide of hydrogen with hydrochloric acid; nevertheless, when heated alone it evolved, first *ammonia*, and then *sulphide of ammonium*, with a trace of *bisulphide of carbon*; here then was a *sulphurized* hydro-carbon. It was found also that gas freed from every trace of sulphide of hydrogen always blackens lead paper strongly when passed through clay, and turmeric paper, if subsequently passed through lime, although quite free from ammonia when taken for experiment. The conclusion arrived at was that *all* gas, as sold, contains a compound from which clay liberates sulphide of *hydrogen*, but that none of the other substances employed in the purification of gas, viz., lime, *peroxide of iron*, *sulphate of iron*, *chloride of calcium* or *dilute sulphuric acid*, possess the same property. Mr. Bowditch does not think that the compound from which clay liberates sulphide of hydrogen is the sulphurized naphthalin one, and he gives it as his opinion that naphthalin is of no use as an illuminant in gas in spite of the quantity of carbon which it contains. Another sulphur compound, which is said to be always present in coal gas, and to be irremovable, but which does not affect lead paper, is *bisulphide of carbon*; its presence is recognized by passing the gas through strong spirit of wine, or methylated spirit kept at about 160° Fahr., the bisulphide becomes precipitated as a white cloud, when the spirit is copiously diluted with water. It occurred to Mr. Bowditch to pass the vapour of sulphide of carbon, with great excess of hydrogen, through tubes filled with slaked lime or clay, which had been dried at 400° or 500° Fahr., and kept between 400° and 600° Fahr. during the passage of the gas and vapour; and he found that while not a trace of *bisulphide of carbon* passed from the tube, *sulphide of hydrogen* did pass, showing that while hot slaked lime had the power of *forming*, it could not *unite* with sulphide of hydrogen,—a very remarkable fact, which he subsequently confirmed by numerous well contrived experiments. Coal gas, quite free from sulphide of hydrogen, when passed through *hot* lime, blackens test paper, showing that marked and hitherto irremovable compounds have been so altered as to be easily removable, for though the *hot* lime will not

retain the sulphide of hydrogen which it has formed, ordinary *cold* hydrate of lime will do so readily; and therefore it is only necessary to pass the gas through cold lime after it has left the hot, to remove effectually the whole of the sulphur organic compounds; nor is the illuminating power of the gas at all injured, as the photometer shows. Gas, as supplied to consumers, contains tar in larger quantity than is generally supposed, this tar is a source both of nitrogen and of sulphur. Mr. Bowditch states that on the water of the tank on which an old gasholder had worked, upwards of a thousand gallons of tar were found floating; he found in this tar paraffin, naphthalin, and the oils which accompany paraffin, and on distilling some he obtained a fifth of its weight of solid pitch, and amongst the products of distillation he obtained sulphide of hydrogen, ammonia, and other highly offensive compounds.

THE MAGAZINES.

Philosophical Magazine.—There are three articles in the March number to which we must draw the chemical student's attention. The first is a note on the Oxidation of Nitrobenzole, and its Homologues, by Arthur H. Church, which throws new light upon the interesting Benzole series of compounds. The second is a letter from Professor Kirchhoff, on the Chemical Analysis of the Solar Atmosphere. In our last number Dr. Noad described the exquisite method of qualitative analysis devised by Bunsen and Kirchhoff, and explained how the metals are clearly indicated by bright bands in the spectrum of a flame in which they are present. Now, as the solid nucleus of the sun is surrounded by an incandescent gaseous atmosphere, it follows, that if we could see the spectrum of this luminous envelope we should see in it the bright bands characteristic of the metals contained in the solar atmosphere. From Kirchhoff's observations it appears, however, that the more intense luminosity of the sun's solid body prevents the formation of a true spectrum of its atmosphere; it *reverses* it in fact, so that, instead of the bright lines which the spectrum of the atmosphere by itself would show, dark lines are produced. Thus we do not see the spectrum of the atmosphere, but a negative image of it. This, however, serves equally well to determine with certainty the presence of those metals which occur in the sun's atmosphere. With the aid of a splendid apparatus from the optical and astronomical manufactory of Steinheil, in Munich, Kirchhoff has commenced his minute examination of the solar spectrum, and of the spectra of the various metals. He has already succeeded in establishing the important fact that the bright lines characteristic of iron, magnesium, chromium, and nickel, in the spectra of flames containing these metals, correspond to dark lines in the solar spectrum. The occurrence of these metals in the sun may therefore be regarded as certain. We need not dwell upon the grandeur of the discovery which has thus enabled the analytical chemist to extend his researches to the great luminary in the centre of our system at a distance of ninety-five millions of miles. While speaking of spectrum analysis, we may mention that the well-defined blue line, observed by F. W. and A. Dupré, in the spectrum produced by igniting the residue of a deep well water, and which they attribute to a previously unrecognized member of the calcium group of metals, is now found to be one of the characteristic lines of calcium itself. The authors have explained the circumstances which led them to regard this line as an indication of a new metal, in a letter to the editors of the magazine now under review. The third article to which we wish to direct the reader's attention, is a paper by Edmund W. Davy, on some further applications of the Ferrocyanide of Potassium in Chemical Analysis. Mr. Davy shows that this salt is a very valuable reagent in volumetric analysis, particularly in estimating the amount of available chlorine in the chloride of lime or bleaching powder. He also shows that it may be advantageously substituted for the cyanide of potassium as a reducing agent for different compounds of arsenic and mercury.

Pharmaceutical Journal.—The March number opens with a detailed description of the examinations of the Pharmaceutical Society, intended for the guidance of students. The most important articles are Professor Redwood's paper on the preparation of Liquor Potassæ, and a masterly contribution from Professor Bentley, on Actæa, or *Cimicifuga Racemosa*. In

a letter to the editor, Dr. Odling complains of Dr. Taylor's want of candour, exposes some of his analytical blunders, and disavows any complicity in his production entitled "Facts and Fallacies connected with the research for Arsenic and Antimony." This letter is evidently only the beginning of a paper war between the two chemists.

The Technologist.—The articles in this month's number, which will be read with most interest by the pharmacist, are those which treat of the sources of Manna, Insect Medicines (cantharides, &c.), and the Sponge Fishery of the Bahamas. Our article on Guarana is quoted at length, and the editor adds to it the following interesting facts :—

"Guarana is obtained from the seeds of *Paullinia Sorbilis*. The shape in which we have met with it is in round rolls. It contains a bitter principle, identical with theine. The Brazilians regard the Guarana bread as stomachic, febrifuge, and aphrodisiac. It is sold all over the country as a necessary for travellers, and a cure for dysentery and many diseases. This substance attracted a good deal of attention amongst the medical profession at Paris, where it is prescribed as a tonic and astringent in cases of nervous headache. According to the analysis of Dr. Stenhouse, F.R.S. (Pharm. Journ., vol. 16, p. 212), guarana is the richest known source of theine, as the following per-centages will show :—Guarana, 5·07 per cent. of theine; good black tea, 2·13; various samples of coffee beans, from 0·8 to 1 per cent.; dried coffee leaves from Sumatra, 1·26; Paraguay tea (*Ilex Paraguayensis*), 1·2 per cent. In addition to theine, guarana contains a colouring matter, apparently analogous to the tannin in cinchona bark, and also a fatty matter which, like the fat of chocolate, does not appear to become rancid by keeping."

Weldon's Register.—This monthly publication is a very complete register of facts and occurrences relating to literature, the sciences and the arts. The articles which it contains are all well written, and many of them are by first-class authors. Each number consists of thirty-two large pages of closely-printed original matter, stitched in a neat wrapper, and sells for the absurdly low price of two-pence! In the March number Mr. John Hollingshead gives the British Museum authorities a scolding for refusing to allow the conductors of two trade journals to compile certain useful works in the Museum Library. As one of the trade journals alluded to by Mr. Hollingshead is the *Chemist and Druggist*, we expect our readers will read the following extract with considerable interest :—

"The library is tolerably free to every 'studious person,' as the trustees phrase it, and many novel-readers, devourers of 'improper' books, and epicures in English *de*-composition, appear to be included under this title. As friends of free museums we are not about to complain of this, but of a certain inquisitorial authority claimed by the chief librarian, under the sanction of the trustees, to look over the work or study of every reader. When a man has applied for a 'library ticket' in the prescribed form, has given the usual professional or householder reference, and has obtained the sacred privilege, he naturally imagines he can refer to any of the national books for any purpose short of mutilation. He is quite mistaken. The proprietors of two respectable trade journals have lately tried the question. We know that mere trade journals are very vulgar things,—they are not 'literature,' they are not metaphysical, they are not even genteely topographical. It is difficult to sympathize with their objects; far more difficult to stand up as their champions. The conductors of these two journals wished to compile two *trade directories*,—a dreadfully utilitarian task, with nothing of poetry, obscurity, or mysticism about it. They went to the British Museum library to collect materials, because they found there the only complete set of trade directories in the whole kingdom. They complied with the Museum regulations, procured their tickets, began their work, were overlooked, and finally expelled, without appeal, by Mr. Panizzi and the trustees, because they did not come under the category of 'studious persons.' It was not pretended that their labour was of a nature to injure any existing copyrights; the managers of the great hotbed of 'paste and scissors' authors could hardly say that; but they were not 'studious persons.' Utility had marked them for her own, and the chief librarian must cast them out. The managers of the British Museum library (under the compulsory provisions of the 'Copyright Act,' by which a copy of every work published in the United Kingdom must be deposited in the Museum library by the publisher before a copy can be legally sold), are determined to gather the only perfect collection of trade and general directories in the country, and then prevent English tax-payers from using them. The story is new, and perfectly true, and calculated to eclipse that of the 'dog in the manger.'"

Dental Cosmos (*Philadelphia*).—This Monthly Record of Dental Science is regularly forwarded to us by the publishers. The journal circulates throughout the United States, and enjoys a very high reputation. The three editors—almost every scientific publication in America is conducted by a plurality of editors — are J. D. White, M.D., D.D.S., J. H. McQuillen, D.D.S., and G. J. Ziegler, M.D., all well-known writers on dental science. The contents of the journal consist of original communications and essays; editorial articles on all subjects of importance to the profession; review and notices of new books, and reports o dental societies. The teeth of our translantic cousins are well looked after. In the advertisement pages of the February number of the *Dental Cosmos* we find announcements issued by the Pennsylvania, the Baltimore, and the Ohio Colleges of Dental Surgery, each of which can boast of seven professors.

NEW BOOKS.

Bowditch (Rev. W. R.)—On Coal Gas. 2/6.
Fownes (George)—Manual of Elementary Chemistry. 8th edition. 12/6.
Galloway (Robert)—Manual of Qualitative Analysis. 3rd edition. 5/.
Gesner (Abraham)—Treatise on Coal, Petroleum, and other Distilled Oils. 7/6.
Hardwich (T. Fred.)—Manual of Photographic Chemistry. 6th edition. 7/6.
Meryon (Edward)—History of Medicine. Vol. I. 12/6.

PUBLICATIONS RECEIVED.

ENGLISH.—Pharmaceutical Journal.—Technologist.—Weldon's Register.—Dublin Hospital Gazette.—Draper and Clothier.

AMERICAN. *For February.*—Scientific American.—American Druggists' Circular.—American Medical Times.—American Stock Journal (New York).—Maryland and Virginia Medical Journal (Baltimore).—Medical and Surgical Reporter (Philadelphia).—Journal of Rational Medicine.—Druggist (Cincinnati).—Boston Medical and Surgical Journal.—Nashville Journal of Medicine and Surgery. *For January.*—Tilden's Journal of Materia Medica (New Lebanon).—Savannah Journal of Medicine.—San Francisco Medical Press.—Chicago Medical Examiner.—Chicago Medical Journal.

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.

The following communication, received from the Secretary, will explain the progress of the New Society:—

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—Presuming that you do not wish it to be inferred that you require three years to get up the "latest intelligence," permit me to draw your attention to the curious mistake made in your report in last month's number, by stating that the Public Meeting of our Society was held on the 23rd January, 1858, instead of 1861.

Will you also allow me the opportunity of saying, that as the report of the resolution of the election of the General Committee, "as per printed list," conveys no information how far our country supporters are represented, to name that the list includes well-known firms at Bath, Birmingham, Bristol, Liverpool, Manchester, Birkenhead, Newcastle, Hull, Shrewsbury, Southampton, and many other places, and that the Executive will not consider the organization of the Society complete until every town and district in the United Kingdom has one or more representatives upon the General Committee, who may, by prompt and general opposition, prevent any legislative restriction, and afford at the same time a constant and powerful connection to promote the general object of the Society. In furtherance of this the Committee will be glad to receive the names of gentlemen in the country who are willing to act in this capacity; it being specially provided by the Rules, that their adhesion shall be free from any responsibility whatever.

I may add, that the Committee intend to publish the Rules, a further list of the town and country committees, together with the names of all the members.

Accompanying this, I have the pleasure to hand you the names of new members since last publication, and am,

Sir, your most obedient Servant,
C. F. BUOTT, *Secretary.*

John B. Dobson, Great Union-street, Drypool, Hull.
W. H. Huggins, Wainfleet.
Clement Taylor, 48, Ducie-street, Greenheys, Manchester.
John Higgins (Mr. Snell's), Hampstead-road.
Peter Wootton, Luton, Beds.
James O. Pegge, Golden Ball-street, Norwich.
W. C. Chamberlain, Downton, near Salisbury.
Morris, Banks, and Son, 3, High-street, Birmingham.
H. C. Jones (C. Jones), Berkhampstead.
Thomas Bradley, Castle Northwich, Cheshire.
William Fowler, Bedford.
J. M. Shillcock, Burnley.
James F. Robinson, Frodsham.
Byatt A. Walker, 2, Clayland's-place, Clapham-road.
Jacob Anthony, Bedford.
William Smith, Queen's-road, Dalston.
E. Fowler, Bedale, Yorkshire.
W. B. Harrison, 6, Bridge-street, Sunderland.
William Halley, 77, Shore, Leith.
C. Humphries, Taunton.
R. B. Stedman, West Malling.
William Gilkes, Leominster.
Charles Knowles, Thorne.
Joseph Pearce, Crookerne.
M. C. J. Harris (Mr. Pearce's), Crewkerne.
George E. Morgan, Market Drayton.
— Cook (Mr. Curtis's), Baker-street.
Richard Aubrey, Cricklade, Wilts.
William Mackaught, Greenock.
John Thomas Leigh, Grange-road, Bermondsey.
Walter Seager, 3, Bermondsey New Road.
Tertius D'Oyly Palu, 339, High-street, Chatham.
William Hibon, 12, Edward's-terrace, Peckham.
Thomas Wm. Hodsoll, 17, Cross-street, Ashley-crescent, N.
Alfred Morris, 42, Brudenell-place, New North-road.
Henry Sutton, 11, Crown-street, Finsbury-square.
David Copson, 41, Northampton-street.
J. W. Griffiths, 10, Albion-place, St. John-street.
John E. Davies, 4, Wharf-rise, Kingsland-road.
Richard Oakley, Gornall Wood, Dudley.

Henry Sharp, High-street, Christchurch.
T. G. Griffin, Peterborough.
J. S. Cape (J. B. Langford's), Wellington, Somerset.
E. H. Anderson, 4, Infirmary-street, Edinburgh.
Robert Rains, 91, Butler-street, Ancoats, Manchester.
Richard Mullock, Grange-lane, Birkenhead.
J. Sherlock, Tarporley, Cheshire.
G. S. Manthorp, 108, High-street, Colchester.
C. J. H. Saunders (Mr. Baxter's), Bromley.
R. Hawke Dingle, Collington, Cornwall.
J. C. Reinhardt, 22, Market-place, Hull.
Edward Vincer, Seven Oaks.
Mottershead and Co., Market-street, Manchester.
James B. Lee, Alresford.
Thomas Hopkinson, High-street, Grantham.
Thomas Farnsworth, Codnor, near Alfreton.
F. Le Feuvre, Bath-street, Jersey.
George T. Prior, 32, Broad-street, Oxford.
Thomas H. Thurland, 41, St. Giles's-road, Oxford.
Alexander Caird, 51, Castle-street, Bristol.
Henry Cox, 44, Strutton-ground, Westminster.
W. and J. Huxtable, 104, St. John-street, Clerkenwell.
William Bush, James-street, Walworth.
— Crafton, jun., Croydon.
Henry Skinner Griffin, Bourton-on-the-Water, Gloucestershire.
James Stainthorpe, Gateshead.
George Busby, 24, Great Windmill-street, Haymarket.
Frederick Blunden, Basingstoke.
Henry Garton, 2, Commercial-place, Kentish Town.
H. C. Henry, 7, Compton-street, Brunswick-square.
P. H. Weston, 218, City-road.
Charles Cannon, 85, Upper-street, Islington.
Chas. Edward Stansmore, 30, Marchmont-street, Burton-crescent.
W. Swinnerton, Princes-end, near Bilston.
Jno. P. Yapp, Woobley, Herefordshire.
Thomas Prior, Bridge-street, St. Ives.
Wm. Moore Turner, Market-hill, St. Ives.
William King, High-street, Soham.
Wm. Mann Covell, High-street, Soham.
Geo. Walter Stevens, Hereford.
Andrew Taylor, Warwick (C. J. Williams's).
Alfred Fennings, Cowes, Isle of Wight.
Charles Edward Marshall, 6, Bedford-street, Mile-end.
Thomas Ruston, Maryport, Cumberland.
Frederick Cole, 33, Botolph-street, Colchester.
Edward Moore, Tewkesbury.
Wm. Samuel Potter, Post-office, Plaistow, Essex.
George Weston, Sleaford.
Rowland Gill Jones, The Lye, near Stourbridge.
John Brown, Ripon.
J. E. Ryder (S. F. Allnutt's), Portsea.
W. F. Waight, 104, Queen-street.
James Shaw, Aisgarth, near Bedale.
Alfred Stratge, Ledbury.
— Parsons, Barnstaple.
— Ward, Barnstaple.
Roddam, H. R., Clive-street, North Shields.
H. Highway, High-street, Walsall.
T. H. Hazledine, Park-street, Walsall.
F. P. Hubbard, 58, Stafford-street, Walsall.
Geo. Walker, 35, Bank-street, Walsall.
W. Coleman, Coventry.
John Haynes, 1, Sussex-place, Trafalgar-road, Old Kent-road.
Percy Pearce, Old Brentford.
Eugene H. Winslow, 3, Walnut-tree-walk, Kennington-road.
Thomas Skinner, Cirencester.
John Moore, Haworth, near Keighley, Yorks.
Henry Matthews, 30, Gower-street, Bedford-square.
E. Hart and Son, 7, Sadler-gate, Derby.
Thomas Roper, Ross, Herefordshire.
Thomas R. Hinkes, Northgate-street, Chester.
Charles Farmer, Shrewsbury.
Thomas Silbert, Shrewsbury.
G. Hodgkinson, Shrewsbury.
Henry Hickin, Shrewsbury.
W. W. New (Mr. Goff's), Kingsland.
E. Thompstone, 190, Stretford-road, Manchester.
S. H. Morris, Broad-street, Islington, Birmingham.
R. O. Harding, Belvedere, Bath.
W. P. Keall, Wantage.
A. H. Keall, Wantage.
T. S. Meadows, Wantage.
Geo. Roust, Wantage.
Thomas Hall, 136, Bradshawgate, Bolton.
Peter Oldham, 172, Crook-street, Boltou.
Thomas Murphy, 87, Kay-street, Bolton.
William Blain, Market-street, Bolton.
James Forbes (Mr. Rothwell's), Lyndhurst-street, Bolton.
Joseph Burton, 2, Patriot-row, Cambridge-heath.
T. R. E. Ridgway, Plympton.
Samuel Pinder, Jun., Laxton, Newark.
H. Williams, Usk.
Geo. L. Sanders, Tiverton.
J. Ebenezer Lister, 127, Horsley-fields, Wolverhampton.
T. Wilson, 4, Trinity House-lane, Hull.
Thos. Prideaux Saunders, Old Cross, Hertford.
W. C. Lamberlin, Downton, Wilts.
Thomas Williams, Church-walks, Llandudno.
Richard J. Chapman, Chipping Ongar.
George D. Beaven, East Cowes, I.W.
Elias C. C. Whittle, Kedgeree-road, East India-road.
W. T. Kite, Taunton.
H. J. Pringner, 10A, King-street, Soho.
Edwin Walter Symes, 1, Arlington-street, Piccadilly.
J. Chullaw Roberts, Dolgelley.
C. Matthews, Ashby-de-la Zouch.
Thomas West, Ardwick-bridge, London-road, Manchester.
P. J. Dewar, Dingwall, N.B.
Thomas A. Goodall, Epworth, Lincolnshire.
Charles Wakeham, Helston.
G. E. Burt, 76, York-street, Westminster.
John Curfew, Flowery-field, Hyde, Cheshire.
Alfred Harris, Stoney Stratford.
Wm. Brown Alexander, High-street, Huntingdon.
Joseph Weston, High-street, Fenton, Stafford.
William Swinnerton, Prince's-end, Tipton, Staffordshire.
Thomas Keble, 25, Ashton-road, Openshaw, Manchester.

PHILADELPHIA DRUG EXCHANGE.—We learn from a correspondent that a Drug Exchange has been established in Philadelphia, which city is the great pharmaceutical centre of the United States. The object of the establishment of this Exchange is to bring those who are engaged in the manufacture and sale of drugs and chemicals into more frequent and familiar intercourse, and furnish facilities for buying and selling that cannot be obtained without such an agency.

DRUGGISTS' PROVIDENT ASSOCIATION.—An attempt was made in the year 1838 to establish a Society with the above designation. The association had for its object, "the affording temporary or permanent relief to its members when in neccessitous circumstanecs, or incapacitated by sickness or age from profitable employment." Mr. George Whipple, F.C.S., has kindly forwarded to us a copy of the laws of this extinct association. We have perused the document with considerable interest, and have handed it to Mr. Buott, the Secretary of the United Society.

THE HORSE.—We understand that Baillicre is about to publish an important work on the Horse from the pen of Mr. J. J. Lupton, M.R.V.C.S., the writer on Veterinary Science in this journal.

NEW PRIZE FILTER.—An advertisement appeared in our last, which has also been published in the other leading scientific journals, offering 5*l.* for the best Filter Case, designed to suit the requirements of the Patent Silicated Carbon. We understand upwards of fifty designs have been received.

CALKIN'S TRANSPARENT EYE SHADE, OR OCCHIOMBRA.

THIS eye shade consists of a very light wire framework, over which is extended an extremely fine transparent fabric of gauze or other material. A portion of the framework (almost invisible to the by-stander) rests upon the nose, passes close to the face under the eyes to the temples, supporting the fabric at the lower part of the shade, thus forming a large chamber for the eyes. The material of which it is formed is sufficiently fine to protect the eyes from wind, sun, or dust, yet at the same time it permits the passage of the air so as to avoid the retention of the heat of the face; this advantage is still further insured by a lengthened opening in the upper part at B B, Fig. 2.

Its appearance, as shown in the engraving, is that of the usual shade; but more symmetrical and elegant in its outline.

The shade can be placed and removed with the same ease as a pair of spectacles; and is so light as to be scarcely perceptible to the wearer, being in weight about half an ounce.

If necessary the fabric may be doubled, to meet the requirements of those with weak or inflamed eyes.

It is suggested that it will be found of great service to those who travel by railroad; as well as to travellers in India and Egypt, and alpine excursionists, as a protection from sun and sand in tropical regions, and from sleet, wind, and the painful glare from the snow in colder situations. It also relieves the angler from wind and glare reflected from the surface of the water; and will be found of *especial* service to ladies, and those who visit the sea-side, protecting them from excessive wind and light, rendering it unnecessary for them to wear veils, and thus allowing free respiration of the pure sea air.

It does not in any way interfere with the wearing of spectacles; and is manufactured in different colours to meet the tastes of those who adopt it, and to suit those persons whose eyes require a neutral, blue, green, or any other tint.

The construction of the shade is fully shown in Fig. 2, where A A represents a spring fitting closely round the forehead, just above the eyebrows and a portion of the head.

B B, another portion of the framework, slightly in advance of A A, leaving an open space between the two for the free escape of generated heat, also supporting the fabric of gauze or other material.

C C, another portion, of flexible material, which rests on the nose under the eyes, and takes the shape of the face extending to the temples, and supporting the fabric from D D, and forming the closed chamber.

D D, the portion of the framework which constitutes the external outline of the shade, assisting to support the fabric.

We have tried the transparent shade, and find, that whilst it affords a more than equal protection to the eyes, it entirely obviates that choking, oppressive sensation that is caused by the use of a veil.

It is manufactured for the patentee by Coxeter, Grafton-street East, W.C.

Fig. 1.

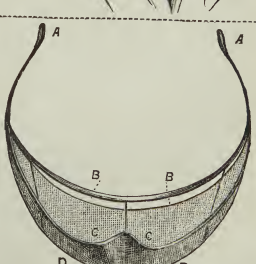


Fig. 2.

MAGENTA INK.

The aniline compounds which have for some time been so largely employed as dyes for woven fabrics, are now applied to uses quite distinct from those indicated by the chemists who introduced them into our manufactures. We recognise the self-same colours which have added so much to the beauty of female attire, on the covers of nearly all our new books, in the candles which we use on state occasions, and in the willow shavings with which we stuff our unused grates. The Magenta Ink, manufactured by Ferris and Company, of Bristol, is one of the latest aniline novelties. We have used this brilliant writing fluid for correspondence and for regular literary work, as well as for the purposes to which ordinary red ink is applied, and can speak favourably of its good qualities. It does not corrode steel pens, and does not injure the surface of the paper. It is of the true Magenta colour, and is delicately perfumed.

OINTMENT FOR HÆMORRHOIDS.

Dr. Frazer has just published a new formula for an ointment in substitution of the old and well-known "gall ointment with opium" in the treatment of piles. He was led to do so from observing, that powdered opium when mixed was always so gritty as to form positively a painful application to the inflamed hæmorrhoid, more resembling a coarse sand or grit than the soft and emollient ointment which it is intended to be, even when the watery extract of opium was used. Dr. Frazer was led to employ an ointment composed of tannin and lard, adding from one to five grains of either the acetate or muriate of morphia to every ounce of ointment, having previously well rubbed the morphia with a little oil in a mortar. The amount of tannin which is used may be varied as may seem desirable; from ten to thirty grains will usually be sufficient for an ounce of either lard or spermaceti ointment. It is believed that this ointment may well replace the *unguentum gallæ* of the Pharmacopœia.

TRADE RETURNS.

THE Board of Trade returns for the past year have been issued, and show a much better state of business than was generally expected. The total value of goods exported being estimated at 135,842,817*l.* against 130,411,529*l.* in the year 1859, and 116,608,756*l.* in the year 1858. The total value of enumerated articles imported into the United Kingdom for the year just ended was 144,887,078*l.*, whilst for 1859 it was 122,538,694*l.*, and for 1858 only 115,146,095*l.* The above figures show a steady improvement in our export business, especially when taking into consideration the unsettled state of affairs on the Continent and in the United States. For the first month in this year, however, there is a falling off of 1,000,000*l.* in our exports as compared with the first month of 1860, and about one million and a quarter for the first month of 1859.

In looking over the returns for the past year we find there were imported 28,017 cwt. of pot and pearl ashes against 25,389 cwt. in the previous year. Of brimstone there is a falling off of 51,216 tons, as compared with the year 1859, the total received being 154,661 tons, against 205,877 tons. The most important increase is in the import of corn; there were 5,906,181 qrs. wheat (of which 1,506,413 qrs. came from the United States, against 37,344 qrs. last year), against 4,023,578 qrs. in 1859; of barley, 2,122,021 qrs. were received last year, against 1,742,066 qrs.; of oats, 2,308,284 qrs., against 1,878,313 qrs.; and of wheat, meal, and flour, 5,139,253 cwt. (of which 2,294,470 cwt. were from the United States, against 218,389 cwt.), against 3,354,801 cwt. Of raw cotton there were imported in 1860, 12,419,096 cwt., against 10,946,331 cwt., the increase being chiefly from the United States. The import of cream of tartar was 31,276 cwts., against 27,137 cwts. The quantity of cochineal imported shows a great falling off, the total being 22,486 cwt., against 27,098. Of indigo there has been an increase of upwards of 14,000 cwt. Logwood has arrived in about the same quantities as the previous year, the total being 26,938 tons, against 27,534 tons. Of madder and madder roots there have been imported 283,295 cwt., against 355,562 cwt. Shumac shows a slight decrease, and cutch is less by upwards of 2350 tons. The total quantity of quicksilver imported last year was 2,966,588 lbs., against 3,160,368 lbs. The quantity of saltpetre imported was 329,206 cwt., against 445,237 cwt., and of nitrate of soda 745,559 cwt., against 519,722 cwt. The total import of raw sugar imported was 440,379 tons, against 454,927 tons. Spices show a great increase, especially cloves, pepper, and nutmegs; but a falling off in cassia lignea. Rum shows a large increase, whilst brandy is $1\frac{3}{4}$ million gallons less. Of

tobacco the imports have been on a par with last year, viz., about 49,000,000 lbs. Among the exports we find there were taken 16,775 cwt. cochineal last year, against 17,395. Of indigo 59,365 cwt., against 57,522. Lac dye shows a small increase, but logwood 1544 tons decrease. The quantity of guano shows a falling off of 8000 tons. Palm oil shows an increase of 27,000 cwt., and cocoa nut about 7000 cwt.; whilst saltpetre exhibits a decrease of 72,000 cwt. There has been a large increase in the export of raw cotton; last year the total quantity was 2,235,970 cwt., against 1,563,778 cwt. In British and Irish produce there were exported 962,906 cwt. soda, against 1,023,222 cwt.; and of soap 249,695 cwt., against 225,592 cwt. There is a great increase in the export of woollen cloths, sheeps' wool, and silk manufactures. Salt also shows an increase of upwards of 104,000 tons. Seed oils have been largely exported, the total being 1,132,324 gallons, against 928,842 gallons. Pickles and sauces still show a falling off, but in manufactured metals there is a large increase, as well as of machinery.

ON THE COMBUSTION OF FLAME IN RARIFIED AIR.

On Friday evening, March 8, Dr. Frankland, Professor of Chemistry at St. Bartholomew's Hospital, gave a lecture at the Royal Institution on the combustion of flame in rarified air. Dr. Frankland stated, that he was led into these researches by observing, that although a certain number of candles purposely selected for experiment burnt at the same rate in the Valley of Chamounix and at the top of Mont Blanc, yet that the light given out in the latter situation was much diminished, and that the blue non-luminous base of the flame extended above the wick.

On pursuing these investigations, Dr. Frankland found that, even under the ordinary varieties of atmospheric pressure, as indicated by the variations in the height of the barometer, there was a great difference in the light given out by the same flame. For instance, when the barometer sinks from 30·2 inches to 27·2 inches, the amount of light is lessened by nearly one-sixth. If, on the contrary, the pressure of air is increased, the amount of light given out is greatly augmented, the rate of combustion of the candle or gas remaining perfectly unchanged. Thus it was found by direct experiment, that a candle burning under the pressure of two atmospheres gives out two and a half times the amount of light that it does under ordinary circumstances, *and yet burns away with no greater rapidity*. The practical application of this remarkable fact is evident; if any means of burning our ordinary illuminating flames under an increased pressure of air can be devised, their power of illumination may be increased to almost any ratio. For example, supposing the rate of increase to be equal at the highest pressures, to that which prevails in those lower ones already experimented upon, an ordinary candle burning under the pressure of 1000 atmospheres would be equal in intensity to the electric light.

Dr. Frankland performed a series of very conclusive experiments, showing the nature of the investigations he had been pursuing, and had diagrams containing the conclusions he had ascertained; these were as follows:—

1st. That the *rate* of burning of any body is not affected by the density of the air.

2nd. That the light increases as the density of air is increased; and that there is a loss of rather more than five per cent. of illuminating power for each inch of pressure, as the mercury sinks from 30 inches of the barometer down to 15 inches.

3rd. That the diminution of light in rarified air is not due to imperfect combustion or to diminished temperature, but is caused by the greater power of diffusion possessed by gases at a low pressure; and that this enables the oxygen to gain access to the interior of the flame, and thus prevent the deposition of those solid particles of carbon to which flame almost entirely owes its luminosity.

It was in the course of these investigations that Dr. Frankland discovered that the intensity of light given out by a flame depends on its temperature; and this observation led to the construction of the double-cylinder burner figured and described in our last number.

Poisonings.—Mrs. Caroline Spain, the wife of a gentleman who formerly held a situation in the house of Mr. Sheriff Lusk, but who is now an inmate of Bethlehem Hospital, was taken suddenly ill while returning from Brompton to Walworth in a cab with her father-in-law. She was carried into her house in a state of insensibility, and in five hours she breathed her last. Mr. Nott, the surgeon who was called in, attributed her death to some narcotic poison, and Mr. Spain senior was apprehended on suspicion of having administered such poison. A *post-mortem* examination of the body proved that the death of the deceased was the result of apoplexy, and Mr. Spain was discharged. Mr. Humphreys complained of the treatment to which his client had been subjected, and hoped that Mr. Nott, the surgeon, would in his leisure moments reflect on the serious injury he had inflicted on a high-minded and honourable gentleman, and that he would be more careful for the future in expressing such hasty and unfounded opinions. Mr. Norton, the magistrate, said he had no doubt that Mr. Nott would feel

the full force of these observations, and expressed his deep regret at what had occurred. We may remark that Mr. Nott only registered himself between the death and his appearance in the Court, no doubt with the fear of the law before his eyes. Had he been only a pharmacist, what would have been done to him?—Rebecca Walker, a girl of 16, attempted suicide by swallowing two doses of laudanum, which she had bought at separate shops in Islington. The poor child had been assailed by her master, who is now awaiting his trial, and feeling wretched and disgraced had tried to deprive herself of life. She was brought before Mr. Leigh, at the Worship Street Police Court, who remanded her for a week.—Sarah Rose Terrey, a young woman of about 30 years of age, was lately brought before Alderman Rose, charged with feloniously attempting to destroy herself. Although that was the charge made against the prisoner, in all probability she will eventually be charged with the offence of wilful murder, or rather as an accessory to that offence, in being feloniously present, aiding and assisting in the murder of her brother, Thomas Richardson, a private in the 7th Regiment of the line. The deceased is supposed to have died from the effects of prussic acid. The case was altogether of a most melancholy and distressing character.

LAW INTELLIGENCE.—*Burton* v. *Hides*.—This was an action brought to recover the balance of an account for advertising for the defendant, who is a surgeon and chemist in Hungerford-street, Strand. The defendant made and sold certain pills, known as "Dr. King's Dandelion and Quinine Pills," and the plaintiffs, in the course of their business as advertising agents, inserted advertisements and puffing paragraphs in upwards of 100 London and country newspapers for him. The defence was, that the old arrangement made between them had worn out, and a new one had been made, under which the plaintiffs agreed to insert a puffing paragraph, together with an advertisement, for 2*s.* the two per newspaper, and that the insertion very seldom happening, the plaintiffs were not entitled to recover. The plaintiffs denied this, saying that they did their best to insert the puffing paragraphs, but that some papers refused to insert them at any price. The jury found a verdict for the plaintiffs, damages 174*l.* 5*s.* A set off of 71*l.* was admitted.—*In Re W. N. Williams*.—The bankrupt was a chemist at Farnham, and he recently applied for a certificate. It was objected by Mr. Redpath for the assignees, that the bankrupt's expenses were 1,000*l.*, against 459*l.* profit. He had gone on paying those creditors who pressed him, increasing his deficiency. Mr. Lawrance said the bankrupt had been fifteen years in business. The stoppage might be attributed to the recent failure in the crop of hops. The bankrupt was a small proprietor, and if there had been an average crop, sufficient would have been realised to pay all the trade debts and liabilities. The Commissioners said the bankrupt had spent three or four times the amount of his earnings, and he had continued in business without any means. The balance-sheet included many tradesmen in the bankrupt's neighbourhood. The certificate (second class) must be suspended for six months.

A CLEVER SWINDLER.—A fellow named Brooks has been largely swindling ironmongers and gas-fitters in the West of England by appointing them agents for a pretended patent for improving the illuminating power of coal gas, and by obtaining from them cash for the royalty and promised goods. Attention was called to Mr. Brooks and his "Patent Carbonizer" by a letter signed "Vulcan," which appeared in the January number of our contemporary, *The Ironmonger*. Other letters soon followed from ironmongers who had been duped by this clever swindler, and upon these letters an amusing leading article in last month's number was founded. The "hue and cry" raised by our contemporary has happily had the effect of checking the career of Mr. Brooks, who is now awaiting his trial in Devizes jail. If any argument or facts were needed to show the value of watchful trade organs, we might refer to this story of the "Patent Carbonizer."

DIPLOMAS IN DENTISTRY.—The following gentlemen having undergone the necessary examinations at the Royal College of Surgeons, and having been found qualified, received their Diplomas in Dentistry, at a meeting of the Board on the 19th inst., viz.: Messrs. William Fort, Preston, Lancashire; Thomas Magor Cardell, Truro, Cornwall; Samuel Adams Parker, Birmingham; Frederick Bullin, Chester; Frederick William Mitchell, Percy-place, Clapham-road; George Lyddon, Southsea, Hants; Charles Henry Bromley, Portland-terrace, Southampton, M.R.C.S., February 6, 1860; John Henry Charles Esridge King, Portsmouth, M.D. Edinburgh, and M.R.C.S., August 2, 1860; and William Edward Jamison, Grosvenor-street.

THE OPIUM ROBBERY.—Christopher Summers, who was accused of having stolen a quantity of opium, valued at 1,000*l.*, the property of the London Dock Company, was lately tried at the Central Criminal Court and acquitted.

NEW BILLS.—In addition to the important Trade Bills noticed in our leader, Mr. Hodgkinson has laid before the House of Commons a Bill concerning the "Recovery of Debts;" providing that where a person, on issuing a writ for a debt, indorses on it particulars of the claims, and makes an affidavit that it is justly due, the person sued shall not be at liberty to appear and defend the action, unless he in his turn swears that he believes he has a good defence to, at least, a part of the claim, or unless he obtains leave from a judge. Mr. Mackinnon has obtained leave to bring in a Bill for establishing equitable counsels of conciliation to settle differences between masters and operatives.

INDUCTIVE ELECTRICITY.—Two lectures on this subject have recently been delivered by our esteemed contributor, Dr. Noad, at the Midland Institute, Birmingham, to very large audiences. Dr. Noad touched on the electric light, galvanic printing, telegraphy, and all the numerous applications of electricity to the arts. The lectures were illustrated by brilliant and successful experiments.

PHARMACY IN THE UNITED STATES.

[FROM OUR CORRESPONDENT IN PHILADELPHIA.]

WILD CHERRY BARK.

IN this stage of our inquiry into the peculiarities of American pharmacy, it will be well to bring into view some of the more useful North American vegetable productions used in medicine, as these necessarily have an important bearing on both our manufacturing and dispensing pharmacy.

Few articles of our Materia Medica are more unique and really important than wild cherry bark—a tonic and sedative drug very extensively prescribed in this country, though as yet almost unknown in Europe. It is so bitter as to have been used as a substitute for the great South American tonic cinchona, though, of course, very inferior to it for its particular uses in periodical diseases; but wild cherry has, in addition, a sedative character which adapts it to the alleviation of general and local irritation, and especially to the distressing cough which is so harassing to patients with pulmonary disease. I know of no remedy either of European or American origin which possesses tonic and sedative properties so remarkably combined.

This drug is named in the Pharmacopœia *Prunus Virginiana*, a name given by Linnæus to a closely allied tree; but botanists have since placed it in the cherry family, and named it *Cerasus Serotina*. It is a beautiful tree, growing in the Western States to the height of 80 or 100 feet, though with us it seldom exceeds half that growth; it is remarkably symmetrical, and, springing up of choice in open fields, is a beautiful addition to the landscape. In May its delicate white blossoms are borne in racemes; then gradually develope into the cherries, which are sometimes eaten, though not very palatable. The wood is esteemed by cabinet-makers, having a close grain, and taking a very good polish.

The inner bark is the part used in medicine; it is commonly taken from any part of the tree, but preferably from the root; the pieces are various in size and thickness, usually without epidermis, though some from the small branches have a skin such as is characteristic of the cherry family generally. It has a lively cinnamon colour, and, when fresh, a characteristic aroma reminding of bitter almonds. This aroma is developed by contact of water; and on distillation a minute quantity of volatile oil may be obtained, which is almost identical in properties with oil of bitter almonds.

This brings me to the highly interesting chemical characteristics of wild cherry bark. Analysis proves it to contain *amygdalin* and *emulsin*; the former principle being decomposable by water in presence of the latter, and forming hydrocyanic or prussic acid, the sedative principle which I have spoken of as so valuable in its preparation. No distinct characteristic bitter principle has as yet been isolated from it; but it is found to impart its bitterness to water with facility, so that this menstruum, *cold*, is universally regarded as that most suitable for its preparations. Besides the cold infusion (half an ounce to the pint), an official syrup grew out of the introduction of the method of displacement; this contains two and a half ounces to the pint: the extraction is by means of cold water, and the sugar is dissolved without the aid of heat.

An ingenious method of making a stronger preparation, called the fluid extract, is the invention of Professor Procter. Where alcohol is used the amygdalin only is extracted, and no hydrocyanic acid is produced; but a tincture being obtained and concentrated till the alcohol is driven off, the concentrated solution is mixed with emulsion of almonds, which yields emulsion and brings about the change, which is akin to fermentation in its *rationale*, developing the prussic acid in combination with the bitter principles, as though the bark alone had been treated with water; and with the advantage, that while the infusion is given by the wine-glassful, and the syrup by the table-spoonful, this fluid extract is efficient in tea-spoonful doses. A lozenge is also made from an alcoholic extract and powdered almonds on the same principle, and a capital sedative tonic it is. It is surprising that some of your intelligent medical men have not sought out this remarkably constituted American remedy, and brought it to bear in their practice; it stands almost, if not quite alone among medicines in its peculiar and useful combination of therapeutic powers.

To the Editor of the Chemist and Druggist.

THE APOTHECARIES' ACT.

Sir,—In an article in your January number you, in speaking of druggists, say, "If they glance at an errand boy's tongue; suggest an effervescing cure for convivial excess; or give a child a spoonful of liquid senna as a remedy for worms, they are liable to be prosecuted for injuring the 'faculty.' . . . If he [the druggist] ventures to suggest that one drug will produce sickness, and that another is a good tonic, he is breaking the seal that Parliament has placed upon his lips. . . . He has no power to do more than to sell what is asked for. The moment he steps over this legal barrier, he lies at the mercy of every petty informer."

Is this really the case? For my part, I think not; you concede too much. If things are bad, let us take care that we do not, by any suggestion or concession, make them worse.

The following is an extract from the Act of Parliament of 1815, generally known as the "Apothecaries Act," An. 55 Geo. III. c. 194 sec. 28:—

"Provided always, and be it further enacted, that nothing in this Act contained shall extend or be construed to extend to prejudice or in any way affect the trade or business of a chemist and druggist, in the buying, preparing, compounding, dispensing, and vending drugs, medicines, and medicinable compounds, wholesale and retail; but all persons using or exercising the said trade or business, or who shall or may hereafter use or exercise the same, shall and may use, exercise, and carry on the same trade or business in such manner, and as fully and amply to all intents and purposes as the same trade or business was used, exercised, or carried on by chemists and druggists before the passing of this Act."

The question then arises, "What was the practice as to those consultations over the counter before the passing of that Act?" I can answer, that in the northern part of the country such consulting and advising was very common; and, indeed, there can be no doubt that such always has been the case with chemists, druggists, apothecaries, or herbalists, or any vendors of medicinal articles. No law could prevent people from asking such questions, nor could any law prevent a chemist, more than any other friend or neighbour, from giving a civil answer. If a person comes into a shop and says, "I want a little rhubarb or magnesia for my child, whichever you think best," the chemist probably replies, "I think both mixed together would be best." The customer says, "Will you mix them, and put them in such a form as will enable me, or the nurse, to give the proper dose readily?" Now, if the chemist complies with this request, and makes it into a mixture with cinnamon water or peppermint water, is it a violation of any law? I do not think it is; else, what is compounding and dispensing? Some people may say, "Then a chemist may make and dispense any mixture the same as the doctor." I reply, "So he may;" but if either the chemist or the doctor cause a person's death by their want of skill, they are liable to indictment for manslaughter.—I am, sir, yours, &c.,

AN OLD CHEMIST.

P.S.—The above extract may be regarded as the chemist and druggist's charter; for, although it gives no new privileges, it ratifies and preserves to him the various functions of buying, preparing, compounding, dispensing, and vending medicines, together with all other functions and practices then customary. And as we are here distinctly recognised by the appellation, "chemist and druggist," I think that is a reason for our adhering to that title, although it may be in some respects inappropriate.

NOTES AND QUERIES.

CHLORODYNE.—J. S. O. (Crowle) writes as follows on this troublesome compound:—"Like your correspondent, a 'Country Chemist,' I have tried Mr. Butterworth's method of making chlorodyne, and do not succeed with it. It seems to me very probable we are purchasing a spurious article for perchloric acid, this acid not being in general use; moreover, I have now by me no less than three samples procured from different places, and varying in price from 1*l.* to 2*s.* 6*d.* per oz. Now this looks suspicious. Where shall we find a sure test for the *genuine article;* can any of your readers furnish one? if so, it will prove of benefit to the trade, as chlorodyne as now sold, at from 1*s.* 6*d.* to 3*s.* per oz., prevents its use in a vast number of cases by the medical profession, on account of its high price. Cooley, in his Cyclopedia of Receipts, gives the method of making the acid, but no test of its purity."

T. C. writes:—"Please to inform your readers that by substituting chloric ether for chloroform the objections to Dr. Ogden's formula for chlorodyne are removed. Chloric ether may be made in the following proportions; chloroform, ½ oz.; sp. vin. rect., 4½ oz., each by weight. Mix carefully.

MIST. BISMUTHI COMP.—J. L. S. W. (Bridgewater) states that the following is the prescription of an eminent physician, which he has frequently dispensed:—℞.—Bismuth. trisnitr. ℈ijss; pulv. tragac. Co; sodæ sescarb. ana, ℥jss; misce, adde gradatim aquæ ℥viij; tinct. lupuli ℥ss; ft. mist. capt. part sext., ter die. Possibly this is the formula required by our correspondent "A Country Druggist."

UNITED SOCIETY.—J. F. and G. Leather are informed that the expression, PROPER ONLY, applies to those who have been duly apprenticed and brought up to the calling of Pharmacist, in contradistinction to Perfumers, Sundrymen, &c., who, as liberal supporters of the Society, will be entitled to receive all the benefits of membership *except* those appertaining to the Benevolent Fund.

THOMSEN'S COPPER-CARBON BATTERY.—J. B. (Salteoats) says that our account of this battery in the January number is imperfect. We obtained our information from Poggendorff's *Annalen*, and endeavoured to convey it to our readers in plain language. J. B. ought to be able to construct one of these copper-carbon batteries from our description. The two liquids must, as a matter of course, be kept separate by a porous diaphragm,—one of the jars used for an electrotype apparatus will answer the purpose. The carbon element may be in the form of a plate or a hollow cylinder; if a plate it must be placed within the porous jar, which will then have to be surrounded by a cylinder of copper; if a hollow cylinder, the carbon element must surround the porous jar, which will then contain a copper plate. The carbon plates or cylinders of a Bunsen's battery may be used. A full description of the best method of preparing Collodion will be given in our serial on Photographic Chemicals. T. Y. (Leicester) is informed that Professor Thomsen's Battery has not yet made its appearance in Philosophical Instrument shops. We refer him to the above answer to our correspondent J. B.

CHEMICAL MANIPULATION.—P. W. (Lincoln.) Mr. C. Greville Williams' *Handbook of Chemical Manipulation*, published by Van Voorst (price 15*l*), has taken the place of Faraday's work on the subject, which has long been out of print. In this most elaborate and complete manual every department of chemical manipulation is minutely explained, with descriptions of the best apparatus and materials, as well as the most approved processes of the art.

DICTIONARY OF BOTANICAL TERMS.—E. Y. (Leeds.) We are not acquainted with any dictionary of the terms used in Medical Botany and Pereira's *Materia Medica*. Lindley's *Elements of Botany* contains a very good Glossary of the principal English, Latin, and Latinized technical terms employed in botany.

OLEINE.—A. F. (Bradford.) The following is the best mode of obtaining Olcine or Elaine from oil: almond or olive oil is agitated in a stout bottle with seven or eight times its weight of strong alcohol (sp. gr. 0·798) at nearly the boiling point, until the whole is dissolved; the solution is next allowed to cool, after which the clear upper stratum is decanted from the stearine which has been deposited, and after filtration the spirit is removed by distillation at a gentle heat; by exposure to a very low temperature, it deposits any remaining stearine, and then becomes pure. Another and more economical method consists in digesting the oil for twenty-four hours with a quantity of soda lye, only sufficient to saponify one half of the oil, and then separating the oily portion, which is *impure* Oleine, from the alkaline solution and newly-formed stearine soap.

SULPHATE OF MANGANESE.—Our correspondent J. T. may obtain every information respecting sulphate of manganese from E. S., 94, St. John Street Road, E.C. We have been given to understand that Dunn, Heathfield and Co., of the Laboratory, Princes Square, Finsbury, are large manufacturers of this salt.

BALSAM OF LIFE.—"Pharmacist" (Ramsbottom). The officinal tinctura benzoini composita is sold under this name, but the original recipe for this once celebrated remedy, as filed in the Office of Rolls, contained twenty-eight ingredients. Take of alcohol Oiv., benzoin ℥vj., liquid storax ℥ij., Socotrine aloes ℥ss., Peruvian balsam ℥j., myrrh ℥ss., Angelica 5ij., balsam tolu ℥ij., extract of liquorice ℥ij. Digest for ten days and strain.

TITLE-PAGE FOR VOL. I.—Subscribers to the *Chemist and Druggist*, who have preserved their numbers for binding, may obtain the title-page to Vol. I. of journal by applying to the Publisher.

TIME OF PUBLICATION.—We beg to inform several correspondents that our journal is only printed in time for the evening post of the 15th, and that they must not therefore expect to receive it before the morning of the 16th of the month.

"MILETUS" (Boulogne-sur-Mer) has served five years with a pharmacist in France, and has dispensed, during that period, an equal proportion of French and English prescriptions. In what part of the world would he stand the best chance of getting on? [We should imagine that Paris, or Boulogne itself, would afford a good opening for one so thoroughly conversant with English and French as our correspondent. Canada would also, we should think, be a good field for his labours, though a correspondent in our last did draw such a heartrending picture of the "griffin" in Montreal.] With regard to the second query, as to price of advertising, we refer "Miletus" to notice at back of title page.

C. F. would be obliged by any one giving a good formula for making a solution for laying on silk, to constitute court plaister: one that will bear washing.

T. B. A. will be obliged to any one who will inform him in what publications he may find formulæ for fruit essences,—Ol. Cognac, Ol. Grape, &c.,—and if the French make better than the English. He also requires a formula for the new granulated citrate of magnesia.

The creditors of J. J. Reeve, pharmacist, late of Church-street, Greenwich, are particularly anxious to know his whereabouts.

[Several queries are excluded owing to press of matter.—ED.]

Thursday, 14th March, 1861.

THE money market has continued very tight throughout the month, the advanced rate of discount noticed in our last having been fully maintained until the last few days, when rather more ease has been perceptible. In Lombard Street first-class paper has been discounted ¼ per cent. under the Bank minimum; business, as a natural course, has continued restricted, everybody restricting their purchases to their actual necessities. The general impression is that the worst has passed, and that ere long money will become much cheaper. Consols closed this afternoon at 91⅞ 92 for money, and at 92¼ 92⅜ for the account.

In chemicals business has been dull and unsatisfactory, fewer sales being made, and these generally at lower prices. Tartaric acid has declined to 1/11, but there is rather more firmness on the part of holders on account of the advices from America. Citric also is firmer at 1/11 from the same cause. Iodine is cheaper, Hughes No. 1 is 4¾*d.* to 5*d.*, and seconds 4½*d.* Bichromate of potass may be had at 10½*d.*, and prussiate of potass at 1*s.* 2*d.* Oxalic acid is dull at 8½*d.* to 9*d.*, and sal acetos at 10*d.* to 10½*d.* A few sales have been made in soda ash at 2½*d.* Flour of sulphur has sold to a good extent at 16*s.* 6*d.* for delivery; sulphate of ammonia remains dull at 14*s.* 6*d.* to 15*s.* Sal ammoniac is easier, firsts 32*s.* 6*d.* Sulphate of copper is lower, sales made at 31*s.* to 31*s.* 6*d.* Refined saltpetre is 38*s.* 6*d.* to 39*s.* 6*d.*, being also cheaper. American spirits of turpentine is quoted at 31*s.* 6*d.* Montreal pot ashes 30*s.* 6*d.*, and pearl 31*s.* 6*d.* per cwt.

There has been a fair business done in drugs during the month, and in a few instances better prices have been obtained. Oil of aniseed has sold at the reduced rates of 6*s.* 6*d.* and 6*s.* 7*d.*, and oil Cassia at 9*s.* 6*d.* Large sales of castor oil have taken place, which sold with good spirit at fully ¼*d.* per lb. advance; fine second pale, 6½*d.*; middling and good, 5½*d.* and 6*d.* Turkey opium is 6*d.* cheaper, some good quality sold at 17*s.* 6*d.* and 18*s.* Cubebs are about 10*s.* per cent. lower. Sarsaparilla is steady, Jamaica sold at 1*s.* 9*d.* to 2*s.* 2*d.* Some fine orange shellac has been sold at 10*l.* Malabar cardamoms sold at 4*s.* 10*d.* and 4*s.* 11*d.*, and Madras 3*s.* 10*d.* Ipecacuanha is quiet at 3*s.* 6*d.* and 3*s.* 9*d.* Jalap is 1*d.* to 2*d.* cheaper, sales made at 4*s.* 5*d.* and 4*s.* 8*d.* Some China vermillion sold at 2*s.* 7*d.* and 2*s.* 8*d.* Cape aloes are 2*s.* and 3*s.* lower. Turkey gums were nearly all bought in.

PRICE CURRENT.

☞ *These quotations are the latest for* ACTUAL SALES *in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the* CASH PRICES IN BULK. *They will, however, be able to form a tolerably correct idea of what they ought to pay.*

	1861.			1860.		
	s.	d.	s. d.	s.	d.	s. d.
ARGOL, Cape, per cwt.	90	0	110 0	105	0	115 0
French	60	0	85 0	60	0	80 0
Oporto, white	0	0	0 0	0	0	0 0
red	50	0	52 0	48	0	50 0
Sicily	85	0	92 6	75	0	80 0
Naples, white	85	0	90 0	100	0	105 0
red	0	0	0 0	0	0	0 0
Florence, white	95	0	105 0	90	0	100 0
red	95	0	97 6	85	0	95 0
Bologna, white	125	0	130 0	120	0	125 0
ARROWROOT, duty 4½*d.* per cwt.						
Bermuda per lb.	1	1	1 5	1	3	1 7
St. Vincent	0	2⅜	0 6	0	2¾	0 6½
Jamaica	0	2½	0 4½	0	2	0 5½
Other West India	0	2	0 3½	0	2	0 3½
Brazil	0	1¾	0 2½	0	1¾	0 2½
East India	0	1⅞	0 2½	0	1⅞	0 3
Natal	0	2½	0 6½	0	3¼	0 7½
Sierra Leone	0	2½	0 3½	0	2½	0 3½
ASHES, per cwt.						
Pot, Canada, 1st sort	30	0	0 0	32	0	33 0
U. S., 1st sort	0	0	0 0	0	0	0 0
Pearl, Canada, 1st sort	31	0	0 0	32	0	32 6
U. S., 1st sort	0	0	0 0	0	0	0 0
BRIMSTONE, rough per ton	£8	10	0 0	£8	10	9 0
roll	14	0	0 0	11	10	12 10
flour	16	6	16 10	14	10	0 0
CAPERS, French, per cwt.	£3	0	£5 0	£3	10	£6 15

	1861.			1860.		
	s.	d.	s. d.	s.	d.	s. d.
CHEMICALS						
Acid—Acetic, per lb.	0	3½	0 4	0	4	0 4½
Citric	1	11	0 0	2	2½	2 3
Nitric	0	5	0 5½	0	5	0 5½
Oxalic	0	8½	0 9	0	8½	0 0
Sulphuric	0	0¾	0 1	0	0¾	0 1
Tartaric, crystal	1	11	0 0	2	0	0 0
powdered	2	0	2 0¾	2	1	0 0
Alum per ton	£6	10	£7 0	£7	5	£7 10
powder	7	10	0 0	8	10	0 0
Ammonia, Carbon, lb.	0s.	5½d.	0 0d.	0s.	6½d.	0 6¾d.
	£	s.	£ s.	£	s.	£ s.
Sulphate per ton	14	0	15 0	13	0	14 0
Antimony, ore	16	0	17 0	16	0	17 0
crude, per cwt.	30s.	0d.	40s. 0d	36s.	0d.	38s. 0d
regulus	50	0	52 0	50	0	52 0
French star	51	0	0 0	50	0	0 0
Arsenic, lump	17	6	18 0	18	0	0 0
powder	8	0	8 3	10	6	11 0
Bleaching Powder	9	0	9 6	11	6	0 0
Borax, E. l. refined	35	0	45 0	44	0	64 0
British	65	0	0 0	65	0	70 0
Brimstone, roll	13	0	14 0	11	10	12 10
flour	16	0	16 6	14	0	14 10
Calomel per lb.	2	9	0 0	2	10	0 0
Camphor, refined	1	10	2 6	2	4	0 0
Copperas, green, per ton	60	0	67 6	65	0	0 6
Cryst. Sublimate, lb.	2	0	2 1	2	1	0 0
Green, Emerald, per lb.	0	0	1 0	0	0	1 0
Brunswick, cwt.	14	0	42 0	14	0	42 0
Iodine, dry per oz.	0	4¼	0 5	0	6¾	0 6¾
Ivory Blk. drop pr. ct.	8	0	9 0	0	0	0 0

PRICE CURRENT—*continued.*

CHEMICALS.	1861. s. d. s. d.	1860. s. d. s. d.
Magnesia, Carbon. ct. 42	6..47 6	42 6..45 0
Calcined, lb..... 1	2.. 2 0	1 6.. 0 0
Minium, red, per cwt. 23	6.. 0 0	23 6..24 6
orange 34	0.. 0 0	36 0.. 0 0
Potash, Bichrom., lb. 0	10½.. 0 0	0 11 .. 0 11½
Chlorate..... 0	10½.. 0 6	0 11 .. 0 11½
Hydriodate ..oz. 0	5½.. 0 6	0 7.. 0 7½
Prussiate ....lb. 1	2.. 0 0	1 3.. 1 3½
red.. 2	0.. 2 1	2 3.. 0 0
Precipitate, red per lb. 2	10.. 0 0	2 10.. 2 11
white..... 2	10.. 0 0	2 10.. 0 0
Prussian Blue 1	6.. 1 10	1 6.. 1 10
Rose Pink ..per cwt. 29	0..30 0	29 0..30 0
Sal-Acetos ....per lb. 0	10.. 0 10½	0 11 .. 0 0
Ammoniac, cwt. British .. 32	0..33 0	32 6..34 6
Epsom 8	0.. 8 3	8 0.. 0 0
Glauber 3	6.. 5 6	5 0.. 5 6
Saltpetre, refined.... 39	0..39 6	40 0..40 6
Soda, Ash, per degree 0	2¾.. 0 3	0 2¾.. 0 3
Bicarbonate ...cwt. 13	0..13 6	14 0..15 0
Crystals....per ton £4	10/ .£5 0/	£5 5/ .£5 10
Sugar Lead, white, ct. 36s.	0d.37s. 0d.	38s.0d.39s. 0d.
brown..... 28	0.. 0 0	28 0.. 0 0
Sulphate Quinine, oz. British in bottle .. 8	2.. 8 6	5 8.. 6 0
Foreign 2	0.. 7 3	5 6.. 5 9
Sulphate Zinc ...cwt. 14	6..15 0	14 0.. 0 0
Verdigris .....lb. 1	3.. 1 5	1 8.. 2 0
Vermillion, English.. 3	0.. 3 4	3 6.. 3 4
China.... 2	9.. 0 0	3 6.. 3 9
Vitriol, blue or Roman per cwt... 33	0..33 6	36 0..36 6
CHICORY....per cwt. Foreign (duty, 6s.) .. 13	0..14 0	9 6..11 0
COCHINEAL...per lb. Honduras, black.... 3	0.. 4 10	3 9.. 5 4
silver 2	8.. 3 4	3 2.. 3 10
pasty 2	3.. 2 7	2 10.. 3 3
Mexican, black..... 2	11.. 3 6	3 6.. 4 0
silver..... 2	7.. 2 10	3 3.. 3 5
Lima 3	0.. 3 9	3 3.. 4 0
Teneriffe, black 2	11.. 4 0	3 6.. 3 11
silver 2	8.. 2 10	3 4.. 3 5
COCOA (duty 1d. per lb.) Trinidad, red, in bond.....per cwt. 62	0..80 0	70 0..100 0
gray 60	0..66 0	62 0..70 0
Grenada..... 57	0..64 0	65 0..72 0
Dominica & St. Lucia 56	0..60 0	0 0.. 0 0
Para 60	0..65 0	63 0..67 0
Bahia 54	0..57 0	45 0..49 0
Guayaquil 66	0..67 0	72 0..74 0
COFFEE, in bond (duty 3d. per lb.) Jamaica, good, mid. to f..... 73	0..100 0	72 0 100 0
low mid. & mid. 66	0..72 0	62 0..70 0
fine ordinary .. 63	0..65 0	59 0..62 0
good ordinary .. 60	0..62 0	57 0..58 0
ord. and triage.. 50	0..58 0	44 0..56 0
Ceylon, Nat. gd. & f. 62	0..65 0	58 0..63 0
ordinary 57	0..61 6	53 0..57 0
Plantation, fine.. 85	0..88 0	88 0..93 0
fine mid. 77	0..84 0	79 0..86 0
good mid..... 72	0..76 0	75 0..78 0
middling 68	0..72 0	70 0..74 0
fi.ord. to low md. 65	0..67 6	64 0..69 0
mixed and triage 50	0..63 0	47 0..65 6
Malabar and Mysore 58	0..78 0	57 0..78 0
Madras 58	0..76 0	58 0..76 0
Tellicherry 64	0..90 0	62 0..88 0
Mocha, fine 112	0 120 0	120 0 130 0
garbled 93	0 110 0	98 0 115 0
ungarbled 62	0..100 0	65 0..86 0
Batavia, yellow 63	0..76 0	65 0..78 0
pale and mixed.. 58	0..62 0	54 0..64 0
Sumatra..... 52	0..56 0	48 0..50 0
Padang 55	0..61 0	50 0..57 0
African 70	0..85 0	0 0.. 0 0
Brazil, f. ord. & wshd. 60	0..70 0	60 0..72 0
good ord. 55	0..60 0	53 0..59 0
ordinary 52	0..54 6	50 0..54 0

COFFEE.	1861. s. d. s. d.	1860. s. d. s. d.
La Guayra 60	0..76 0	57 0..78 0
Costa Rica, mid. to f. 67	0..80 0	66 0..80 0
good and f. ord. 60	0..66 0	50 0..65 0
Cuba, mid. to fine .. 67	0..80 0	68 0..80 0
f.ord. & f. f. ord. 63	0..66 0	62 0..68 0
ord. & good ord. 57	0..62 0	55 0..63 0
Porto Rico 60	0..78 0	58 0..78 0
St. Domingo..... 58	0..64 0	52 0..59 0
DRUGS, £. s. £. s.	£. s. £. s.	£. s. £. s.
Aloes, Hepatic, pr.cwt. 3	10.. 9 10	3 10.. 0 0
Socotrine 6	0..24 0	5 10..25 0
Cape, good..... 2	2.. 2 8	1 15.. 1 19
inferior .. 1	8.. 2 1	1 2.. 1 15
Barbadoes..... 2	0..24 0	2 0..22 10
Ambergris, gray, p.oz. 32s.	0d. 35s. 0d.	30s. 0d. 36s. 0d.
Angelica Root, pr.cwt. 30	0..40 0	35 0..42 0
Aniseed, China star .. 70	0..80 0	95 0..100 0
German, &c. 32	6..40 0	32 0 42 6
Balsam, Canada, pr.lb. 1	3.. 0 0	0 10.. 1 0
Capivi 1	10.. 2 1	1 10.. 2 0
Peru .. 4	5.. 4 7	4 7.. 4 9
Tolu 7	0.. 0 0	3 10.. 4 0
Bark, Cascarilla, cwt. 24	0..49 0	30 0..45 0
Peru. crwn. &gry. pr.lb. 1	7.. 2 8	1 4.. 2 9
Calisaya, flat .. 4	0.. 4 3	2 8.. 2 9
quill .. 3	6.. 4 0	2 6.. 2 9
Carthagena 1	2.. 2 0	0 8.. 1 0
Pitayo 1	6.. 2 2	0 10.. 1 10
Red 2	0.. 6 0	2 0.. 6 0
Bay Berries, per cwt. 22	0..40 0	50 0..52 0
Borax 20	0..35 0	20 0..37 6
Tincal 32	0..50 0	30 0..45 0
Bucca Leaves ....lb. 0	4.. 1 3	0 6.. 1 0
Burgundy Pitch, p.cwt. 0	0.. 0 0	0 0.. 0 0
Camomile Flowers.. 45	0 110 0	95 0 170 0
Camphor, China..... 100	0 195 0	175 0 180 0
Canella Alba..... 22	0..42 0	25 0..45 0
Cantharides ..per lb. 2	3.. 2 5	2 7.. 2 9
Cardamms. Mlbr. good 4	7.. 4 9	4 8.. 5 0
inferior .. 4	0.. 4 6	4 0.. 4 6
Madras .. 2	7.. 4 3	3 5.. 4 6
Ceylon 3	9.. 3 10	2 3.. 2 4
Cassia Fistula, pr.cwt. 20	0..35 0	21 0..26 0
Castor Oil, 1st pale, lb. 0	5¾ 0 6¼	0 6¼ 0 7
second 0	5¼ 0 5¾	0 5¾ 0 6¼
infr. and dark 0	4¾ 0 5	0 5 0 5¾
Bombay, in casks 0	4.. 0 4¾	0 3¾ 0 4¼
Castorum 1	0..28 0	5 0..20 0
China Root..per cwt. 9	0..10 0	12 0..14 0
Coculus Indicus 12	0..13 0	10 0..11 0
Cod-liver Oil, per gal. 4	0.. 5 6	4 9.. 7 0
Colocynth, apple, lb. 1	0.. 1 4	0 10.. 1 9
Colombo Root, per cwt. 15	0..47 6	12 0..45 0
Corosus Nuts, per cwt. 15	0..27 0	22 0..27 0
Cream Tartar, per cwt. French 130	0 135 0	132 6 140 0
Venetian 135	0.. 0 0	140 0 145 0
gray 122	6 125 0	122 6 127 6
brown..... 115	0 120 0	110 0 115 0
Croton Seed..... 70	0..85 0	70 0..80 0
Cubebs 140	0 145 0	260 0.. 0 0
Cummin Seed..... 36	0..40 0	22 0..30 0
Dividivi..... 12	0..13 0	11 0..13 0
Dragon's blood, reed. £7	0 £14 0	£7 0 £14 10
lump 5	0..12 0	5 0..12 10
Galangal Root..... 1	5.. 1 6	1 2.. 1 14
Gentian Root 0	14.. 0 16	0 16.. 0 17
Ginger, preserved, in bd. s. d.	s. d.	s. d. s. d.
(duty 2d. lb.) per lb. 0	7.. 0 8	0 10.. 1 0
Guinea Grains. per cwt. 46	0..48 0	37 0..40 0
Honey, Narbonne .. 70	0..95 0	70 0..90 0
Cuba 36	0..45 0	22 0..32 0
Jamaica 40	0..60 0	26 0..54 0
Ipecacuanha, per lb.. 3	10.. 4 0	3 6.. 3 8
Isinglass— Brazil..... 1	8.. 4 0	1 10.. 4 4
East India 1	4.. 3 9	1 10.. 4 6
West India 3	6.. 3 9	4 0.. 4 4
Russian, long staple 12	0..13 0	13 0..14 0
leaf..... 9	6..12 0	11 6..13 6
Simovia.. 2	0.. 2 6	1 6.. 2 6
Jalap 4	3.. 4 8	3 6.. 3 7

PRICE CURRENT—*continued.*

DRUGS.	1861. s.	d.	1860. s.	d.
Juniper Berries, p. cwt.				
German and French	9	0 .. 9	6	9 0 .. 9 6
Italian	9	0 .. 10	0	9 0 .. 10 0
Lemon Juice, per deg.	0	1 .. 0	1½	0 0½ .. 0 0
Lichen Islandicus, lb.	0	0 .. 0	0	0 0 .. 0 0
Liquorice... per cwt.				
Spanish	83	0 .. 90	0	85 0 .. 95 0
Italian	85	0 .. 95	0	95 0 .. 100 0
Macaroni, Genoa, p.lb.	0	3 .. 0	6	0 4 .. 0 6
Naples	0	4 .. 0	5½	0 4 .. 0 5½
Manna, flaky	3	0 .. 3	10	5 0 .. 5 3
small	1	6 .. 2	0	2 6 .. 2 7
Musk ..... per oz.	26	0 .. 34	0	22 0 .. 27 0
Myrabolans, per cwt.	8	6 .. 11	0	8 6 .. 12 0
Nux Vomica.....	9	0 .. 10	6	14 0 .. 15 0
Opium, Turkey	14	0 .. 18	6	18 0 .. 23 6
Egyptian....	6	0 .. 13	0	6 0 .. 14 0
Orris Root.. per cwt.	27	0 .. 30	0	34 0 .. 37 0
Pellitory Root	0	0 .. 0	0	0 0 .. 0 0
Pink Root....per lb.	1	2 .. 1	4	1 3 .. 0 0
Quassia (bit. wd.) ton £4	0	0 .. 0	0	£10 0 £12 0
Rhatania Root, p.lb.	0s.	2d. 0s.	0d	0s. 6d. 0s. 7d
Rhubarb, China, rnd.	1	0 .. 2	4	1 0 .. 2 9
flat..	1	2 .. 2	6	1 2 .. 3 0
Dutch, trimd.	3	3 .. 3	6	3 3 .. 3 6
Russian	11	6 .. 0	0	13 6 .. 14 0
Saffron, Spanish	56	0 .. 57	0	47 0 .. 0 0
Salep..... per cwt.	£13	0s.	£14 0	£10 0 £13 10
Sarsaparilla, Lima..	0s.	10d.. 1s.	2d	0s. 10d.. 1s. 1d
Para	0	10 .. 1	2	0 11 .. 1 1
Honduras	0	11 .. 1	6	0 11 .. 1 5
Jamaica .	1	3 .. 2	5	1 3 .. 2 7
Sassafras....per cwt.	10	0 .. 12	0	9 0 .. 10 0
Scammony .. per lb.				
virgin	28	0 .. 34	0	30 0 .. 33 0
second	14	0 .. 24	0	14 0 .. 26 0
Seedlac	55	0 .. 70	0	35 0 .. 50 0
Seneka Root.....	2	2 .. 0	0	2 0 .. 2 2
Senna, Calcutta	0	1½ .. 0	2½	0 2 .. 0 2½
Bombay	0	2½ .. 0	3½	0 2½ .. 0 3½
Tinnevelly	0	3 .. 0	10	0 4 .. 0 6½
Alexandria	0	4 .. 0	6	0 4 .. 0 6
Shellac, orange, pr.ct.	190	0 200	0	180 0 .. 190 0
liver & garnet.	150	0 160	0	180 0 .. 197 6
block	110	0 125	0	150 0 .. 162 6
bttn.dk.to mid.	140	0 145	0	145 0 .. 160 0
good and fine..	165	0 190	0	170 0 .. 180 0
Snake Root	1	2½ .. 1	3½	0 10 .. 0 0
Spermaceti, refined..	1	3 .. 1	4	1 10 .. 0 0
Squills	0	1 .. 0	2	0 1½ .. 0 3
Sticklac	70	0 .. 105	0	60 0 .. 75 0
Tamarinds, E. India.	8	0 .. 12	0	9 0 .. 14 0
W.I. per cwt.	16	0 .. 35	0	15 0 .. 40 0
Terra Japonica,				
Gambier... per cwt.	17	3 .. 17	6	16 6 .. 17 0
Cutch	24	6 .. 25	0	27 0 .. 28 0
Valerian Root, Engl.	20	0 .. 40	0	20 0 .. 40 0
Vanilla,				
Mexican .. per lb.	30	0 .. 70	0	40 0 .. 80 0
Brazil.....	0	0 .. 0	0	14 0 .. 20 0
Wormseed ..per cwt.	20	0 .. 0	0	23 0 .. 0 0
FARINA, Scotch	20	0 .. 25	0	16 0 .. 16 6
GUM .....per cwt.	£.	s. .. £.	s.	£. s. .. £. s.
Ammoniac, drop	2	10 .. 5	0	2 15 .. 5 0
lump....	0	15 .. 1	15	1 0 .. 2 0
Animi, fine pale	15	0 .. 16	0	14 10 .. 15 10
bold amber ..	13	0 .. 14	10	12 0 .. 14 0
medium	9	0 .. 11	11	7 10 .. 10 10
small & dark ..	5	0 .. 8	5	4 0 .. 6 10
ordinary dark	2	10 .. 5	0	2 10 .. 5 0
Arabic, E.I.f. palepickd	2	10 .. 3	0	2 10 .. 3 0
unsorted, good to f.	1	18 .. 2	10	1 16 .. 2 8
red and mixed	1	4 .. 1	10	1 4 .. 1 10
siftings	0	0 .. 0	0	0 18 .. 1 3
Turkey, pkd. gd. to fi.	6	0 .. 7	10	6 10 .. 7 10
second & infr.	2	2 .. 5	5	2 5 .. 5 5
in sorts	1	10 .. 2	8	1 12 .. 1 18
Gedda	1	6 .. 1	7	1 9 .. 1 10
Barbary, white.....	1	11 .. 1	13	1 10 .. 1 12
brown	1	9 .. 1	10	1 6 .. 1 10
Cape	0	16 .. 0	18	0 10 .. 0 18
Assafœtida, fair to gd.	1	0 .. 5	0	1 0 .. 4 10
Benjamin, first qual.	18	0 .. 34	0	18 0 .. 34 0

GUM.	1861. £. s.	£. s.	1860. £. s.	£. s.
Benjamin, 2nd qual.	8	5 .. 16	10	8 10 .. 16 10
3rd ,,	3	0 .. 7	10	3 0 .. 7 10
Copal, Angola red ..	5	0 .. 6	10	4 7 .. 4 15
pale..	4	5 .. 5	0	3 6 .. 3 10
Benguela	4	10 .. 5	10	3 10 .. 3 15
Sierra Leone lb.	1s.	10d.. 1s.	9d	1s. 0d.. 1s. 9d
Manilla, pr. ct.	15	0 .. 43	0	0 0 .. 0 0
Dammar, pale, pr. ct.	48	0 .. 52	0	42 0 .. 45 0
	£. s.	£. s.	£. s.	£. s.
Galbanum.....	7	0 .. 9	0	8 0 .. 10 0
Gamboge, pkd. pipe .	6	0 .. 7	10	5 10 .. 8 10
in sorts ..	4	0 .. 5	10	4 0 .. 5 5
	s.	d. s.	d.	s. d. s. d.
Gualacum .....per lb.	0	8 .. 1	6	0 10 .. 1 9
Kino ..... per cwt.	95	0 .. 120	0	90 0 .. 105 0
Kowrie	22	0 .. 24	0	13 0 .. 14 6
Mastic, pkd., per lb..	8	0 .. 9	0	6 0 .. 9 6
Myrrh, sd. & fi., pr. ct.	140	0 .. 180	0	160 0 .. 230 0
sorts	80	0 .. 130	0	90 0 .. 150 0
Olibanum, pale drop.	60	0 .. 70	0	45 0 .. 52 0
amber & yellow	40	0 .. 54	0	29 0 .. 40 0
mixed & dark..	12	0 .. 26	0	10 0 .. 24 0
Senegal	25	0 .. 60	0	28 0 .. 33 0
Sandrac.....	90	0 105	0	94 0 120 0
Tragacanth, leaf 180	0	340	0	190 0 290 0
in sorts..100	0	130	0	100 0 126 0
LAC DYE, per lb. D. T.	1	10½.. 1	11	1 10½.. 1 11
B Mirzapore.....	1	7 .. 1	8	1 7 .. 1 8
Other good and fine...	1	2 .. 1	2	1 1 .. 1 3
Ord. & Native marks	0	2 .. 0	11	0 4 .. 0 10
OILS.....per tun	£. s.	£. s.		£. s. £. s.
Seal, pale	39	10 .. 40	0	36 0 .. 0 0
yellow	34	0 .. 35	0	31 10 .. 32 10
brown	33	0 .. 34	0	30 0 .. 0 0
Sperm, body.....	103	0 .. 180	0	99 0 .. 99 10
headmatter....	105	0 .. 0	0	101 0 .. 102 0
Cod.....	37	0 .. 0	0	35 0 .. 35 10
Whale, Greenland ..	0	0 .. 0	0	37 0 .. 37 5
South Sea, pale	38	0 .. 39	0	32 10 .. 0 0
yellow	0	0 .. 36	0	30 0 .. 31 0
brown	33	0 .. 0	0	28 0 .. 29 0
E. I. Fish	30	0 .. 0	0	27 10 .. 28 0
Olive, Galipoli ..tun	60	0 .. 0	0	61 0 .. 0 0
Trieste	58	0 .. 59	0	58 0 .. 59 0
Levant	55	0 .. 58	10	55 0 .. 0 0
Mogadore	53	0 .. 53	0	50 0 .. 0 0
Spanish	58	0 .. 0	0	57 10 .. 59 0
Sicily	57	10 .. 0	0	57 10 .. 58 10
Florence, pr. ½-chst.	0	16 .. 0	0	0 18 .. 1 0
Cocoanut, Cochin, tun	51	0 .. 51	6	45 0 .. 0 0
Ceylon....	49	0 .. 50	0	42 0 .. 0 0
Sydney	44	0 .. 48	6	37 0 .. 42 0
Ground Nut and Gin.				
Bombay.....	39	0 .. 0	0	38 0 .. 0 0
Madras	40	0 .. 42	0	44 0 .. 45 0
Palm, fine	45	0 .. 46	0	46 10 .. 0 0
Palm Nut.....	39	0 .. 40	0	35 0 .. 36 0
Linseed	28	0 .. 0	0	27 0 .. 0 0
Rapeseed, Engl. pale.	38	10 .. 0	0	40 0 .. 0 0
brown	36	5 .. 0	0	39 0 .. 0 0
Foreign do.	39	0 .. 42	0	40 10 .. 41 0
brown	36	0 .. 0	0	40 0 .. 0 0
Lard	63	0 .. 0	0	63 0 .. 0 0
Tallow	32	10 .. 0	0	30 0 .. 0 0
Rosin	0	0 .. 0	0	7 5 .. 0 0
OILS, Essential;	s.	d. s.	d.	s. d. s. d.
Almond, essen. pr. lb.	30	0 .. 31	0	30 0 .. 31 0
expressed..	1	0 .. 0	0	1 0 .. 0 0
Aniseed	6	0 .. 6	6	8 6 .. 0 0
Bay..... per cwt.	122	6 .. 0	0	90 0 100 0
Bergamott....per lb.	6	6 .. 14	0	6 6 .. 11 0
Cajeputa, bond, pr. oz.	0	1½ .. 0	1⅝	0 1 .. 0 1¼
Caraway .... per lb.	4	3 .. 6	0	4 3 .. 6 0
Cassia.....	9	6 .. 10	0	15 0 .. 0 0
Cinnamon(inb.) p.oz.	3	0 .. 4	3	2 9 .. 4 0
Cinnamon Leaf	0	1 .. 0	2½	0 2½ .. 0 3
Citronel.....	0	4⅜ .. 0	5½	0 3 .. 0 3½
Clove.....	0	4½ .. 0	0	0 2½ .. 0 3½
Croton	0	3 .. 0	4	0 4½ .. 0 4½
Juniper ....per lb.	1	10 .. 4	0	3 0 .. 5 0
Lavender	2	6 .. 5	0	2 6 .. 5 0
Lemon	5	0 .. 6	0	5 0 .. 11 0
Lemongrass..per oz.	0	6 .. 0	7	0 5½ .. 0 6½

PRICE CURRENT—*continued.*

	1861.			1860.		
OILS, Essential,	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Mace, ex	0	2 ..	0	0	1¾ ..	0 2
Neroli	6	0 ..	9	0	6 ..	10 0
Nutmeg	0	1⅔ ..	0	2	0	2½ .. 0 2½
Orange ....per lb.	7	0 ..	8	0	10	2 .. 11 0
Otto Roses ...per oz.	16	0 ..	25	0	16	0 .. 26 0
Peppermint ...per lb.						*
American	7	6 ..	15	0	8	0 .. 13 6
English	35	0 ..	43	0	30	0 .. 34 0
Rhodium ...per oz.	3	9 ..	6	0	3	9 .. 6 0
Rosemary ....per lb.	1	10 ..	3	0	2	0 .. 3 0
Sassafras	3	0 ..	3	6	3	6 .. 4 0
Spearmint	5	0 ..	12	6	5	0 .. 12 0
Spike	1	3 ..	1	6	1	3 .. 1 6
Thyme	1	9 ..	2	0	1	9 .. 2 3
PITCH, British, pr.cwt.	6	0 ..	6	3	6	0 .. 6 3
Swedish	10	3 ..	0	0	10	3 .. 0 0
SALTPETRE, per cwt.						
Bengal, 6 p.c. or under	36	0 ..	37	6	40	0 .. 41 0
over 6 per cent.	34	0 ..	36	0	35	6 .. 40 0
Madras	32	6 ..	35	0	34	0 .. 38 0
Bombay	31	6 ..	34	6	29	0 .. 33 6
British-refined	29	0 ..	30	6	40	0 .. 46 0
Nitrate of Soda	13	0 ..	14	0	15	6 .. 16 0
SEED, Canary ...p. qr.	40	0 ..	52	0	44	0 .. 52 0
Caraway, English, p.c.	28	0 ..	30	0	0	0 .. 0 0
German, &c.	26	0 ..	34	0	30	0 .. 38 0
Clover, English, red..	52	0 ..	64	0	50	0 .. 60 0
white..	55	0 ..	90	0	86	0 .. 95 0
Germ. & French, red	54	0 ..	64	0	40	0 .. 52 0
white..	70	0 ..	90	0	84	0 .. 95 0
Coriander	14	0 ..	17	6	0	0 .. 0 0
East India	13	0 ..	16	0	11	6 .. 12 6
Hemp	44	0 ..	46	0	32	0 .. 34 0
Linseed, English, p. qr.	0	0 ..	0	0	0	0 .. 0 0
Black Sea and Azof	51	0 ..	0	0	50	0 .. 50 6
Calcutta	53	6 ..	52	0	49	0 .. 50 0
Bombay	54	0 ..	0	0	52	0 .. 52 6
Egyptian	50	0 ..	52	0	48	0 .. 0 0
St. Petrsbg..Morshnk	51	0 ..	52	0	48	0 .. 50 0
Archangel	46	0 ..	47	0	37	0 .. 0 0
Riga	42	0 ..	44	0	0	0 .. 0 0
Mustard, brown, p.bhl	11	0 ..	15	0	10	0 .. 13 0
white	9	0 ..	0	0	11	0 .. 14 0
Niger	48	0 ..	0	0	41	0 .. 42 0
Poppy, E.I. ..per qr.	50	0 ..	0	0	48	0 .. 50 0
Rape, English	0	0 ..	0	0	0	0 .. 0 0
Danube	60	0 ..	0	0	48	0 .. 0 0
Calcutta, fine	53	0 ..	54	0	51	0 .. 52 0
Bombay, Guzerat	59	0 ..	60	6	58	0 .. 59 0
Feroze. & Scinde	48	0 ..	54	0	46	0 .. 52 0
Teel, Sesame or Gngly.	36	0 ..	43	0	48	0 .. 58 0
Cotton .....per ton	7	10 ..	0	0	5	10 .. 5 15
Gnd. Nut Kernels, tn.	300	0 ..	310	0	280	0 .. 300 0
SOAP, Lond. yel. p.cwt.	21	0 ..	38	0	21	0 .. 38 0
mottled	34	0 ..	38	0	36	0 .. 38 6
curd	52	0 ..	0	0	52	0 .. 0 0
Castile	37	0 ..	40	0	37	0 .. 40 0
Marseilles	40	0 ..	41	0	40	0 .. 41 0
SOY, China ..(per gal.)	0	2 ..	2	10	4	3 .. 4 7
Japan	1	4 ..	1	6	0	0 .. 0 0
SPICES, duty free, except pepper,						
Cassia Lignea, p. cwt.	86	0 ..	0¼	0	94	0 102 0
Vera	12	0 ..	50	0	12	0 .. 36 0
Buds	190	0 ..	0	0	180	0 185 0
Cinnamon, per lb.						
Ceylon, 1st quality.	1	5 ..	2	5	1	7 .. 2 3
2nd ditto ..	1	2 ..	1	8	1	1 .. 1 9
3rd ditto ..	0	9 ..	1	3	0	10 .. 1 4
Tellicherry	0	10 ..	1	0	0	9 .. 0 11
Cloves, Penang	1	1½ ..	1	4	1	2 .. 1 5
Amboyna	0	4½ ..	0	5½	0	4¾ .. 0 5½
Zanzibar	0	4 ..	0	4½	0	3¾ .. 0 4
Ginger	£	s. ..	£	s.	£	s. £ s.
Jamaica, finepr.cwt.	7	0 ..	10	10	8	0 .. 10 0
ord. to good	3	5 ..	6	6	4	0 .. 7 10
African	36s. 6d.		37s. 6d.		35s. 6d.	37s. 6d.
Bengal	20	0 ..	32	0	22	6 .. 25 0
Malabar	36	0 ..	0	0	0	0 .. 0 0
Cochin	40	0 ..	105	0	77	0 .. 136 0
Mace, 1st qlty. lb.	1	6 ..	1	10	1	9 .. 2 10
2nd. & infr.	0	7 ..	1	4	1	2 .. 1 8
Nutmegs per lb.						
brown Penang, &c.	0	11 ..	4	0	1	6 .. 4 1
limed	0	10 ..	2	6	1	4 .. 2 7

	1861.			1860.		
SPICES,	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Pepper(duty 6d. pr. lb.)						
Black, in bond						
Malabar	0	4¼ ..	0	4⅝	0	4⅝ 0 5⅜
Aleppee	0	4¼ ..	0	4½	0	4¼ 0 4½
Penang & Batavia	0	3¾ ..	0	3⅞	0	4 .. 0 4½
Singapore	0	3¾ ..	0	4	0	4¼ 0 4¾
White, Tellicherry	0	10¾ ..	1	0	0	9¾ .. 1 0
Other sorts	0	5⅜ ..	0	6½	0	7 .. 0 7⅝
Cayenne	1	1 ..	1	8	1	0 .. 1 3
Pod, S. Leone pr. c.	28	0 ..	32	0	24	0 .. 32 0
Zanzibar	70	0 ..	80	0	57	0 .. 61 0
Long	32	0 ..	34	0	35	0 .. 38 0
Pimento, mid. to good	0	2⅜ ..	0	3½	0	3⅜ .. 0 4
ordinary	0	2⅛ ..	0	2⅜	0	3⅛ .. 0 0
SPONGE, Turk. f. pkd.	20	0 ..	26	0	20	0 .. 26 0
fair to good	9	0 ..	18	0	7	0 .. 18 0
ordinary	3	0 ..	8	0	3	0 .. 8 0
Bahama	0	3 ..	1	3	0	3 .. 1 0
TEA (duty 1s. 5d. per lb.) in bond.						
Congou, ordinary	0	8 ..	0	10	1	3 .. 1 4
good ordinary	0	10¾ ..	1	0	1	4½ .. 1 5
but middling	1	2 ..	1	4	1	5¾ .. 1 6
blackish leaf	1	2½ ..	1	5	1	6¾ .. 1 7½
ditto strong	1	6 ..	1	8	1	8 .. 2 0
ditto to extra fine	1	9 ..	2	5	2	0 .. 2 6
Ning Yong and Oolong	1	2 ..	2	0	1	7 .. 1 11
Souchong, ordinary	1	1 ..	1	4	1	5 .. 1 6
fair to fine	1	5 ..	1	10	1	7 .. 2 4
finest	2	0 ..	3	1	2	0 .. 3 0
Flowry Pekoe, ordinary	0	0 ..	0	0	0	0 .. 0 0
fair to good	1	5½ ..	2	2	2	0 .. 2 6
fine to finest	3	0 ..	5	0	3	0 .. 4 6
Caper, scented, in bxs.	0	8½ ..	2	1	1	1½ .. 2 6
Orange Pekoe, plain	0	11 ..	1	4	1	0 .. 1 6
scented	1	1 ..	2	3	1	4 .. 2 6
Twankay, ordy. Canton	0	0 ..	0	0	0	0 .. 0 0
common to good	0	9 ..	1	2	0	10 .. 0 11
fine to Hyson blnd.	1	3 ..	1	4	1	2 .. 1 4
Hyson Skin, common	0	8 ..	0	10	0	10 .. 0 11
good to fine	0	11 ..	1	1	1	0 .. 1 1
Hyson, ordy. to comn.	1	4 ..	1	7	1	7 .. 1 8
fair to fine	1	8 ..	2	6	2	0 .. 2 6
finest	2	9 ..	4	6	3	0 .. 4 0
Young Hys. Boh. kind	0	9 ..	0	10	0	7 .. 0 9
good to fine	1	0 ..	2	3	0	11 .. 2 4
Imperial	1	0 ..	2	2	1	0 .. 2 2
Gunpowder	0	11 ..	3	9	0	10 .. 3 9
Assam	1	7 ..	4	6	1	9 .. 5 0
TURPENTINE,						
Rough ... per cwt.	9	0 ..	9	3	9	6 .. 0 0
Spirits, English	30	6 ..	0	0	35	6 .. 0 0
American, in casks	31	6 ..	0	0	36	6 .. 0 0
WAX, Bees, English	£3	5 ..	£3	10	£3	5 .. £3 10
German	8	0 ..	8	5	8	0 .. 8 10
American	9	0 ..	10	0	8	10 .. 9 10
white fine	10	0 ..	10	10	10	0 .. 10 15
Jamaica	9	0 ..	9	15	9	0 .. 9 5
Gambia	9	0 ..	0	0	8	10 .. 8 15
Mogadore	6	10 ..	8	0	6	0 .. 7 5
East India	7	10 ..	9	5	7	10 .. 9 0
ditto, bleached	10	10 ..	12	5	9	0 .. 10 10
vegetable, Japan	2	16 ..	3	3	3	10 .. 3 15
WOOD, Dyr., bar, pn.	0	0 ..	0	0	3	10 .. 0 0
Brazil, first quality	70	0 ..	75	0	80	0 .. 85 0
second quality	55	0 ..	60	0	60	0 .. 0 0
logs	20	0 ..	21	0	20	0 .. 35 0
Brazileto	4	0 ..	5	10	4	0 .. 5 10
Camwood	20	0 ..	24	0	27	0 .. 30 0
Ebony, Green	7	0 ..	8	10	12	0 .. 0 0
Fustic, Cuba	8	10 ..	9	0	8	15 .. 9 5
Jamaica	5	10 ..	0	0	5	10 .. 5 15
Savanilla	5	0 ..	5	5	5	5 .. 5 10
Zante	5	0 ..	7	0	9	10 .. 11 0
Logwood, Campeachy	6	10 ..	6	15	6	15 .. 0 0
Honduras	0	0 ..	0	0	5	5 .. 0 0
St. Domingo	5	0 ..	5	5	5	0 .. 0 0
Jamaica	4	15 ..	0	0	4	10 .. 4 15
Nicaragua, lar. & sol.	10	10 ..	11	0	12	0 .. 13 10
small	0	0 ..	0	0	6	0 .. 8 0
Lima, first pile	12	0 ..	12	10	13	0 .. 14 0
second pile	10	0 ..	10	10	12	10 .. 13 0
Red Sanders	6	5 ..	6	7 6d	5	10 .. 0 0
Sapan, Bimas	6	0 ..	8	15	7	10 .. 9 0
Siam, &c.	5	16 ..	8	10	6	15 .. 8 10

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LETTERS PATENT.

DRUGS, CHEMICALS, ETC.

1680 Brearley, T., Whitechapel, improvements in machinery for producing and revivifying animal charcoal.

1742 Brooman, R. A., Fleet-street, London, the treatment of gluten, in order to manufacture a substance to be employed in printing fabrics and other industrial uses, in substitution for albumen.

1748 Johnson, J. H., Lincoln's-inn-fields, London, improvement in the manufacture or production of white lead, and in the machinery or apparatus employed therein.

1816 Gélis, A., Paris, improvements in preparing compounds of cyanogen, and principally of prussiates, by means of sulphuretted carbamids or amids, which supply sulphurets of carbon by their decomposition.

INDIA RUBBER AND GUTTA PERCHA.

1750 Woodcock, A. B., Manchester, improvements in the manufacture of moulded articles of vulcanized india rubber.

1873 Pitman, J. T., Gracechurch-street, London, an improved process in the vulcanization of india rubber and other similar substances under pressure.

MISCELLANEOUS.

1712 Danchell, F. L. H., Westminster, certain improvements in filters.

1806 Cambacérès, J. L. L., Paris, certain improvements in treating fatty and oily matters.

1859 Trevithick, F. H., Clapham, Surrey, and Jones, R., London, improvements in means or apparatus to be used in effecting the preservation of animal and vegetable substances.

2105 Johnson, J. H., Lincoln's-inn-fields, London, improvements in the treatment of zinc and other ores, and in the apparatus employed therein.

2173 Cross, P. R., Sudbury, Suffolk, improvements in means or apparatus to give protection to the mouth and nostrils in respiration, and to the throat and chest, against the injurious effects of atmospheric influences.

2848 Cail, G. H., Southampton, improvements in the manufacture of manure.

PROVISIONAL PATENTS.

DRUGS, CHEMICALS, ETC.

3104 Stevens, C., Welbeck-street, London, a new mode of obtaining an article resembling honey, and to be used as a substitute therefor.

3161 Pùls, F., Hackney Wick, improvements in obtaining products from coal, gas tar, gas pitch, coal tar, asphalte, resin, and other bituminous and resinous substances.

INDIA RUBBER AND GUTTA PERCHA.

3121 Brooman, R. A., Fleet-street, London, improvements in the treatment of caoutchouc, and the employment of a product obtained thereby, for lubricating and coating bodies.

14 Fuller, W. C., Bucklersbury, London, Jaques, J. A., and Fanshawe, J. A., Tottenham, Middlesex, improvements in the adaptation of india rubber and analogous gums, and compounds thereof, to valves, pump buckets, packing, and other parts of steam, water, air, and gas engines and apparatus.

62 Moulton, S., Bradford, Wilts, improvements in the manufacture of india rubber, applicable to springs, valves for machinery, and other purposes.

MISCELLANEOUS.

2491 Strang, otherwise Hutchinson, Mary, Glasgow, improvements in the manufacture of lubricating oil.

3092 Szerelmey, N. C., Brixton-road, Surrey, an improved method of, and apparatus for, purifying oils and varnishes.

3142 Johnson, J. H., Lincoln's-inn-fields, London, improvements in magneto-electric machines.

3164 Johnson, J. H., Lincoln's-inn-fields, London, improvements in instruments for assisting the sense of hearing.

27 Vial, L. C. E., Paris, improvements in the manufacture of colouring matters and pigments from coal oil, raw naphthaline, and from the waste lime from gas works.

45 Clark, W., Chancery-lane, Middlesex, improvements in filters.

47 Hirsch, H., Berlin, improvements in insulating the conducting wires used for telegraphic purposes.

63 Brooman, R. A., Fleet-street, London, treating lava and other volcanic substances, in order to fit them for employment in certain arts and manufactures.

101 Hall, V., Oxford-street, improvements in obtaining colouring matters.

Invention protected for Six Months, by the deposit of a complete Specification.

3193 De Buffon, B. N., Paris, improvements in apparatuses for clarifying and purifying water and other liquids.